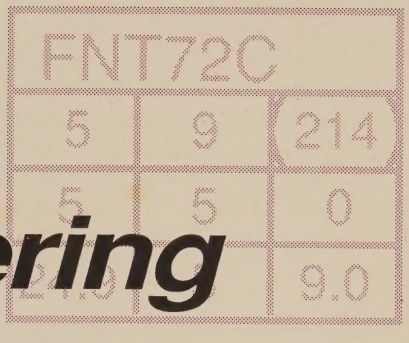
CATV System Engineering and Design Reference Handbook



C-COR®

ELECTRONICS INC

Effective dates of issue for original release and revisions of this book are:

Original 18 January 1994 as TD0064
Revised 27 May 1994 as TD0064.

This handbook contains information to be used when designing with C-COR's CATV Amplifiers.

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C-COR Electronics, Inc.
AMPLIFIER EVALUATION PARAMETERS

The following amplifier specifications represent the performance of complete factory-aligned amplifiers that are ready to be installed and balanced in a *two-way* (sub-split) cascade. No additional accessories such as input pads, equalizers, splitters, directional couplers or striplines are required for single amplifier performance measurements. All specifications of single amplifier performance measurements follow the NCTA Recommended Practices. All given input and output levels are measured at the housing ports, not the RF module output or testpoints.

Each amplifier output level and slope is set at the factory to the specified levels at the amplifier's housing output port. All level specifications include levels at both the high and low frequencies of the amplifier station's bandwidth. The level and slope remain constant throughout the performance measurements of each amplifier. The specified output levels represent the recommended Operational Output levels for the best overall amplifier Noise/CTB performance. These recommended output levels can be increased to improve cascaded Carrier-to-Noise or decreased to improve cascaded CTB. Changing the output levels to improve one performance parameter degrades the other.

The typical performance of a trunk amplifier is limited by the types of hybrid gain stages used and how the necessary insertion losses are managed. Trunk amplifiers can use Push-Pull (T & MT), PHD (PT & SP), Feedforward (FT & SF) and PHD/Feedforward (ST) technology. The insertion losses of the trunk amplifiers (regardless of hybrid technology) include:

- Input and output testpoints,
- Diplex filters,
- Interstage gain compensators,
- PIN Diode level compensation circuitry, and
- ALC and BA Pick-off circuitry.

The interstage gain compensator is factory installed and aligned in trunk amplifiers to produce the interstage slope specified for the type of trunk amplifier. The PIN Diode level compensation circuitry is factory aligned for a specified amount of reserve gain. Both the ALC and BA pickoff circuits are hardwired and are included in every trunk amplifier.

The typical BA Module is a flat gain amplifier that can be installed in any T, PT, FT, and ST series trunk amplifier. BA Modules are available with Push-Pull, PHD, and two output PHD hybrid technology. The BA module output slope is set by the trunk amplifier slope plus the use of the module's adjustable slope control. The recommended operational output levels are established at the housing distribution output port. Any necessary adjustment to the output slope is done using the module's slope control. The published CTB, XM and CSO performance specifications of the BA Modules do not include the contribution from the trunk amplifier. The Noise Figure is measured at the input of the BA Module.

The typical Distribution (D) and Line Extender (E) amplifier stations are flat gain amplifiers. These amplifiers are available with Push-Pull and PHD hybrid technology. Distribution and Line Extender amplifiers operate with sloped output levels. The amount of output slope is primarily determined by the slope at the input of the amplifier. The published CTB, XM, CSO, and Noise Figure station performances are measured with the amplifier operating at the recommended output levels.

EXPLANATION OF TABLE COLUMNS:

INPUT LVL:	SIGNAL LEVELS @ HIGH/LOW FREQUENCY USED TO TEST THE UNIT (IN dBmV).
INPUT NOISE FIGURE:	NOISE FIGURE (INCLUDING 1 dB FOR EQUALIZER) OF THE UNIT (IN dB).
INPUT LOSS:	ATTENTUATION APPLIED TO THE TEST SIGNAL (IN dB).
GAIN OPER:	OPERATIONAL GAIN OF THE UNIT. FOR TRUNK AMPLIFIERS, THIS IS THE OPERATIONAL SPACING (IN dB).
GAIN RANGE:	ADJUSTABLE ATTENUATION RANGE FOR THE UNIT (IN dB).
GAIN INTPAD:	ATTENUATION USED DURING UNIT TESTING (IN dB).
SLOPE OPER:	OUTPUT SLOPE OF THE UNIT @ HIGH/LOW FREQUENCY (IN dB). THIS IS A FUNCTION OF INPUT SIGNAL SLOPE AND INTERNAL EQUALIZATION.
SLOPE RANGE:	ADJUSTABLE SLOPE RANGE FOR THE UNIT (IN dB).
SLOPE INTEQ:	EQUALIZATION USED DURING TESTING (IN dB). THIS IS THE AMPLIFER TILT.
OUTPUT LVL:	UNIT OUTPUT SIGNAL LEVELS @ HIGH/LOW FREQUENCY AFTER AMPLIFICATION (IN dBmV).
DISTORTION C/SO:	COMPOSITE SECOND ORDER (CSO) FIGURE (IN dB).
DISTORTION C/XMOD:	CROSS MODULATION (XM) FIGURE (IN dB).
DISTORTION C/CTB:	COMPOSITE TRIPLE BEAT (CTB) FIGURE (IN dB).
I ma @ 60 VAC:	UNIT CURRENT DRAW WHEN POWERED BY 60 Vac (IN mA).

AMP SPEC		220 MHz (21 CH) TRUNK, BRIDGER, & FEEDER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
T520	1,3,4	8/ 8	7.5	0	31	0 -24	0	10	0 -13	10	39/ 29	--	82	83	610
T510	1,3,4	8/ 8	8.5	0	25	0 -24	0	6	0 -13	6	33/ 27	--	94	95	530
T500	1,3,4	11/ 11	9.5	0	21	0 -24	0	6	0 -13	6	32/ 26	--	95	96	520
BA 142014-01		19.5/ 13.5	10.0	1	29.5	0 -6	0	6	0- 3.5	0	48/ 42	--	65	67	200
E501	3,4	23/ 17	10.5	0	26	0 -24	0	6	0 -13	0	49/ 43	--	66	68	380
E417	3,4	22/ 16	10.0	0	27	0 -24	0	6	0 -13	0	49/ 43	--	66	67	270
MT570	3,4	8/ 8	9.5	0	31	0 -24	0	10	0 -13	10	39/ 29	--	83	83	610
MT560	3,4	11/ 11	9.5	0	21	0 -24	0	6	0 -13	6	32/ 26	--	96	96	520
D501	3,4	7/ 1	7.0	0	42	0 -24	0	6	0 -13	0	49/ 43	--	63	65	510
D502	3,4	23/ 17	8.5	0	26	0 -24	0	6	0 -13	0	49/ 43	--	63	67	420

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		245 MHz (24 CH) TRUNK, BRIDGER, & FEEDER														
PARAMETER>		INPUT				GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS		OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
T521	1,3,4	8/ 8	7.5	0		31	0 -24	0	11	0 -17	11	39/ 28	--	80	81	610
T511	1,3,4	8/ 8	8.5	0		25	0 -24	0	6	0 -17	6	33/ 27	--	92	94	530
T501	1,3,4	11/ 11	9.5	0		21	0 -24	0	6	0 -17	6	32/ 26	--	94	95	520
BA 142014-01		19.5/ 13.5	10.0	1		29.5	0 -24	0	6	0 -3.5	0	48/ 42	--	63	65	200
E501	3,4	22/ 16	10.5	0		26	0 -24	0	6	0 -17	0	48/ 42	--	65	67	380
E417	3,4	21/ 15	10.0	0		27	0 -24	0	6	0 -17	0	48/ 42	--	65	66	270
MT571	3,4	8/ 8	9.5	0		31	0 -24	0	11	0 -17	11	39/ 28	--	81	81	610
MT561	3,4	11/ 11	9.5	0		21	0 -24	0	6	0 -17	6	32/ 26	--	94	94	520
D501	3,4	6/ 0	7.0	0		42	0 -24	0	6	0 -17	0	48/ 42	--	63	65	510
D502	3,4	22/ 16	8.5	0		26	0 -24	0	6	0 -17	0	48/ 42	--	64	67	420

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		270 MHz (30 CH) TRUNK, BRIDGER, & FEEDER														
PARAMETER>		INPUT				GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C / SO	C / XMOD	C / CTB	
T522	1,3,4	8/ 8	7.5	0	31	0 -24	0	11	0 -16	11		39/ 28	--	78	79	610
T512	1,3,4	8/ 8	8.5	0	25	0 -24	0	6	0 -16	6		33/ 27	--	90	91	530
T502	1,3,4	11/ 11	9.5	0	21	0 -24	0	6	0 -16	6		32/ 26	--	92	93	520
BA 142014-01		19.5/ 13.5	10.0	1	29.5	0 -6	0	6	0 -3.5	0		48/ 42	--	63	65	200
E501	3,4	22/ 16	10.5	0	26	0 -24	0	6	0 -16	0		48/ 42	--	64	66	380
E417	3,4	21/ 15	10.0	0	27	0 -24	0	6	0 -16	0		48/ 42	--	64	65	270
MT572	3,4	8/ 8	9.5	0	31	0 -24	0	11	0 -16	11		39/ 28	--	79	79	610
MT562	3,4	11/ 11	9.5	0	21	0 -24	0	6	0 -16	6		32/ 26	--	91	91	520
D501	3,4	6/ 0	7.0	0	42	0 -24	0	6	0 -16	0		48/ 42	--	62	63	510
D502	3,4	22/ 16	8.5	0	26	0 -24	0	6	0 -16	0		48/ 42	--	63	65	420

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		300 MHz (35 CH) TRUNK, BRIDGER, & FEEDER														
PARAMETER>		INPUT				GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C / SO	C / XMOD	C / CTB	
FT523	1,2,4	7/ 9	8.0	0	29	0 -21	0	5	0 -17	7	36/ 31	--	97	102	885
FT513	1,2,4	10/ 10	9.0	0	26	0 -21	0	7	0 -17	7	36/ 29	--	100	104	885
FT503	1,2,4	12/ 12	9.0	0	21	0 -21	0	7	0 -17	7	33/ 26	--	99	103	885
T533	1,3,4	6/ 6	7.5	0	33	0 -24	0	12	0 -17	12	39/ 27	--	76	77	610
T523	1,3,4	8/ 8	7.5	0	31	0 -24	0	12	0 -17	12	39/ 27	--	76	77	610
T513	1,3,4	8/ 8	8.5	0	25	0 -24	0	7	0 -17	7	33/ 26	--	89	90	530
T503	1,3,4	11/ 13	8.5	0	21	0 -24	0	5	0 -17	7	32/ 27	--	90	91	520
B507	3,4	11/ 4	7.0	0	37	0 -24	0	7	0 -17	0	48/ 41	--	61	60	560
BA 109004-01	2	16.5/ 9.5	6.0	0	31	0 -21	0	7	0 -3.5	0	47/ 40	--	73	74	400
BA 142020-01		19.5/ 12.5	11.0	0	29	0 -6	0	7	0 -3.5	0	48/ 41	--	67	69	400
BA 142014-01		18.5/ 11.5	8.5	0	29.5	0 -6	0	7	0 -3.5	0	48/ 41	--	62	64	200
E527	3,4	16 9	8.5	0	31	0 -24	0	7	0 -17	0	47/ 40	--	70	70	650
E547	3,4	19/ 12	9.0	0	28	0 -24	0	7	0 -17	0	47/ 40	69	70.5	70.5	650
E517	3,4	14/ 7	8.5	0	31	0 -24	0	7	0 -17	0	45/ 38	70	68	68	550
E513	3,4	17/ 10	8.5	0	31	0 -24	0	7	0 -17	0	48/ 41	--	62	63	550
E501	3,4	22/ 15	10.5	0	26	0 -24	0	7	0 -17	0	48/ 41	--	63	64	380
E417	3,4	21/ 14	10.0	0	27	0 -24	0	7	0 -17	0	48/ 41	--	64	65	270
MT573	3,4	8/ 8	8.0	0	31	0 -24	0	12	0 -17	12	39/ 27	--	77	78	610
MT563	3,4	11/ 11	8.0	0	21	0 -24	0	7	0 -17	7	32/ 25	--	89	90	520
MT623	2,5	8/ 8	8.0	0	27	0 -18	0	7	0 -16	7	35/ 28	77.5	85	85	530
D501	3,4	5/ -3	7.0	0	42	0 -24	0	7	0 -17	0	47/ 40	--	62	63	510
D502	3,4	21/ 14	8.5	0	26	0 -24	0	7	0 -17	0	47/ 40	--	62	63	420

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		330 MHz (40 CH) TRUNK, BRIDGER, & FEEDER													
PARAMETER>		INPUT				GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			Ima @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS		OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
FT524	1,2,4	7/ 9	8.0	0		29	0 -21	0	5	0 -15	7	36/ 31	--	96	101	885
FT514	1,2,4	10/ 12	9.0	0		26	0 -21	0	5	0 -15	7	36/ 31	--	98	103	885
FT504	1,2,4	12/ 14	9.0	0		21	0 -21	0	5	0 -15	7	33/ 28	--	100	105	885
T514	1,3,4	7/ 9	8.5	0		25	0 -24	0	5	0 -15	7	32/ 27	--	88	89	530
T504	1,3,4	10/ 12	8.5	0		21	0 -24	0	5	0 -15	7	31/ 26	--	89	91	520
B507	3,4	10/ 3	8.0	0		37	0 -24	0	7	0 -15	0	47/ 40	--	62	62	560
MT574	3,4	8/ 8	9.5	0		31	0 -24	0	12	0 -15	12	39/ 27	--	77	77	610
MT564	3,4	10/ 10	10.5	0		21	0 -24	0	7	0 -15	7	31/ 24	--	88	88	520
BA 108002-01		22/ 15	13.5	0		29	0 -6	0	7	0 -3.5	0	51/ 44	--	65	64	600
BA 108002-02		23/ 16	13.5	0		25	0 -6	0	7	0 -3.5	0	48/ 41	--	68	68	600
BA 109004-01	2	16/ 9	6.0	0		31	0 -21	0	7	0 -3.5	0	47/ 40	--	71	72	400
BA 142020-01		18.5/ 11.5	11.0	0		29	0 -6	0	7	0 -3.5	0	47/ 40	--	67	69	400
BA 142014-01		17.5/ 10.5	9.0	0		29.5	0 -6	0	7	0 -3.5	0	47/ 40	--	63	64	200
E527	3,4	16/ 9	8.5	0		31	0 -24	0	7	0 -15	0	47/ 40	--	70	70	650
E517	3,4	14/ 7	8.5	0		31	0 -24	0	7	0 -15	0	45/ 38	73.5	67	67	550
E513	3,4	16/ 9	8.5	0		31	0 -24	0	7	0 -15	0	47/ 40	--	61	63	550
E501	3,4	21/ 14	10.5	0		26	0 -24	0	7	0 -15	0	47/ 40	--	62	64	380
E417	3,4	20/ 13	10.0	0		27	0 -24	0	7	0 -15	0	47/ 40	--	63	64	270
D501	3,4	4/ -3	7.0	0		42	0 -24	0	7	0 -15	0	46/ 39	--	64	65	510
D502	3,4	21/ 14	8.5	0		26	0 -24	0	7	0 -15	0	47/ 40	--	61	63	420

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		360 MHz (45 CH) TRUNK, BRIDGER, & FEEDER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
FT525	1,2,4	7/ 9	8.0	0	29	0 -21	0	5	0 -15	7	36/ 31	--	93	100	885
FT515	1,2,4	10/ 12	9.0	0	26	0 -21	0	5	0 -15	7	36/ 31	--	95	102	885
T505A	1,3,4	10/ 12	8.0	0	21	0 -24	0	5	0 -15	7	31/ 26	--	89	91	520
BA 108002-01		22/ 15	13.5	0	29	0 -6	0	7	0 -3.5	0	51/ 44	--	65	64	600
BA 108002-02	2	23/ 16	13.5	0	25	0 -21	0	7	0 -3.5	0	48/ 41	--	67	67	600
BA 142020-01		18.5/ 11.5	11.0	0	29	0 -6	0	7	0 -3.5	0	47/ 40	--	65	67	400
BA 109004-01	2	16/ 9	6.0	0	31	0 -21	0	7	0 -3.5	0	47/ 40	--	70	71	400
E527	3,4	16/ 9	8.5	0	31	0 -24	0	7	0 -15	0	47/ 40	--	71	72	650
MT565	3,4	10/ 10	9.5	0	21	0 -24	0	7	0 -15	7	31/ 24	--	87	87	520

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		400 MHz (52 CH) TRUNK, BRIDGER, & FEEDER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
FT526	1,2,4	7/ 9	8.0	0	29	0 -21	0	5	0 -16	7	36/ 31	--	93	98	885
FT516	1,2,4	10/ 12	8.5	0	26	0 -21	0	5	0 -16	7	36/ 31	--	95	100	885
FT506	1,2,4	12/ 14	9.0	0	21	0 -21	0	5	0 -16	7	33/ 28	--	97	102	885
T506A	1,3,4	10/ 12	8.0	0	21	0 -24	0	5	0 -16	7	31/ 26	--	89	89	520
T516	1,3,4	7/ 7	8.0	0	25	0 -24	0	7	0 -16	7	32/ 25	--	84	85	520
BA 142020-01		17.5/ 10.5	11.0	0	29	0 -6	0	7	0 -3.5	0	46/ 39	--	66	67	400
BA 142014-02		16.5/ 9.5	9.5	0	29.5	0 -6	0	7	0 -3.5	0	46/ 39	--	61	62	200
BA 109004-01	2	16.5/ 9.5	6.0	0	31	0 -21	0	7	0 -3.5	0	47/ 40	--	67	68	400
E513	3,4	15/ 8	8.5	0	31	0 -24	0	7	0 -16	0	46/ 39	--	63	63	550
E507	3,4	20/ 13	12.0	0	26	0 -24	0	7	0 -16	0	46/ 39	--	65	65	380
E527	3,4	16/ 9	9.0	0	31	0 -24	0	7	0 -16	0	47/ 40	--	68	68	650
E517	3,4	14/ 7	8.5	0	31	0 -24	0	7	0 -16	0	45/ 38	69.5	65	65	550
E547	3,4	19/ 12	9.0	0	28	0 -24	0	7	0 -16	0	47/ 40	67	67.5	67.5	650
MT566	3,4	9/ 9	9.5	0	21	0 -24	0	7	0 -16	7	30/ 23	--	86	87	520
B507	1,3,4	9/ 2	8.0	0	37	0 -24	0	7	0 -16	0	46/ 39	--	62	62	560
D507	3,4	4/ -3	7.0	0	42	0 -24	0	7	0 -16	0	46/ 39	--	60	61	510

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		450 MHz (60 CH) TRUNK & BRIDGER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
ST517	1,2,4	10/10	8.5	0	26	0 -21	0	5	0 -18	5	36/31	--	95	102	950
ST507	1,2,4	12/12	8.5	0	21	0 -21	0	5	0 -18	5	33/28	82	97	104	950
FT537	1,2,4	7/9	8.0	0	30	0 -21	0	5	0 -18	7	37/32	78	89	94	885
FT527	1,2,4	7/9	8.0	0	29	0 -21	0	5	0 -18	7	36/31	78	93	96	885
FT517	1,2,4	10/12	8.5	0	26	0 -21	0	5	0 -18	7	36/31	78	93	97	885
FT507	1,2,4	12/14	9.0	0	21	0 -21	0	5	0 -18	7	33/28	78	97	102	885
PT517	1,2,4	7/7	8.5	0	25	0 -21	0	7	0 -18	7	32/25	--	88	88	770
PT507	1,2,4	10/10	9.0	0	21	0 -21	0	7	0 -18	7	31/24	--	92	93	850
T507	1,3,4	10/12	8.0	0	21	0 -24	0	5	0 -18	7	31/26	77	86	86	520
MT567	1,3,4	9/9	9.5	0	21	0 -24	0	7	0 -18	7	30/23	--	85	86	520
B507	1,3,4	8/1	8.0	0	37	0 -24	0	7	0 -18	0	45/38	63	62	62	560
B527	1,3,4	12/8	8.0	0	36	0 -24	0	7	0 -18	3	48/41	62	61	61	950

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		450 MHz (60 CH) FEEDER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
BA 108002-02	2	23/16	12.0	0	25	0 -21	0	7	0 -3.5	0	48/41	58	65	65	600
BA 109004-01	2	16/9	6.0	0	31	0 -21	0	7	0 -3.5	0	47/40	64	65	65	400
BA 142014-02		16.5/9.5	11.0	0	29.5	0 -6	0	7	0 -3.5	0	46/39	65	62	62	200
BA 142033-02		23.5/16.5	11.0	0	22	0 -6	0	7	0 -3.5	0	45/38	--	62	62	510
E527	3,4	16/9	9.0	0	31	0 -24	0	7	0 -18	0	47/40	65	66	66	650
E547	3,4	19/12	9.0	0	28	0 -24	0	7	0 -18	0	47/40	65	66	66	650
E517	3,4	14/7	8.5	0	31	0 -24	0	7	0 -18	0	45/38	66	64	64	550
E507	3,4	20/13	12.0	0	26	0 -24	0	7	0 -18	0	46/39	66	64	64	380
D507	3,4	4/-3	7.0	0	42	0 -24	0	7	0 -18	0	46/39	66	60	61	510

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		550 MHz (77 CH) TRUNK & BRIDGER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
ST519	1,2,4	10/ 12	8.0	0	26	0 -21	0	5	0 -18	7	36/ 31	80	89	95	1000
ST509	1,2,4	11/ 11	8.0	0	21	0 -21	0	5	0 -18	5	32/ 27	81	91	99	1000
FT549	1,2,4	3/ 5	9.0	0	33	0 -21	0	5	0 -18	7	36/ 31	73	78	83	950
FT529	1,2,4	7/ 9	8.5	0	29	0 -21	0	5	0 -18	7	36/ 31	76	87	90	1000
FT519	1,2,4	10/ 12	8.5	0	26	0 -21	0	5	0 -18	7	36/ 31	76	88	91	1000
FT509	1,2,4	11/ 11	9.0	0	21	0 -21	0	5	0 -18	7	32/ 27	77	89	94	1000
PT509	1,2,4	11/ 11	9.0	0	21	0 -21	0	7	0 -18	7	32/ 25	69.5	87	90	840
PT519	1,2,4	7/ 7	9.0	0	25	0 -21	0	7	0 -18	7	32/ 25	69.5	87	90	940
SF739	1,2,5	15/ 13.5	9.0	1	31	0 -21	0	7	0 -17	5.5	46/ 39	73	70	70	980
SF719	1,2,5	20/ 18.5	9.0	1	26	0 -21	0	7	0 -17	5.5	46/ 39	73	70	70	980
SF719	1,2,5	20/ 18.5	9.0	1	26	0 -21	0	7	0 -17	5.5	46/ 39	73	70	70	980
FNT539	1,2,5	7/ 6	7.0/ 6.0	1	31	0 -18	0	6	0 -17	5.5	38/ 32	70	76	76	1250
(BRIDGER OUT)			7.0/ 6.0	1	37	0 -18	0	9	0 -17	8.5	44/ 35	67	67	67	--
FNT53C	1,2,5	9/ 6.5	7.5/ 7.0	1	27.5	0 -18	0	9	0 -17	7.5	36.5/ 27.5	70	78	79	1250
(BRIDGER OUT)			7.5/ 7.0	1	35.5	0 -18	0	9	0 -17	8.5	44/ 35	65	66	66	--
FNT52C	1,2,5, 8	11.5/ 11.5	8.0/ 8.0	2	24.5	0 -18	0	9	0 -17	9	36/ 27	70	77	78	1250
(BRIDGER OUT)		11.5/ 11.5	8.0/ 8.0	2	32.5	0 -18	0	9	0 -17	9	44/ 35	65	65	66	--
FNT72C	1,2,5, 8	11.5/ 11.5	8.0/ 8.0	2	24.5	0 -18	0	9	0 -17	9	36/ 27	70	77	78	1250
(BRIDGER OUT)		11.5/ 11.5	8.0/ 8.0	2	32.5	0 -18	0	9	0 -17	9	44/ 35	65	65	66	--
FNT73C	1,2,5, 8	10.5/ 10.5	8.0/ 8.0	2	26	0 -18	0	9	0 -17	9	36.5/ 27.5	70	77	78	1250
(BRIDGER OUT)		10.5/ 10.5	8.0/ 8.0	2	33.5	0 -18	0	9	0 -17	9	44/ 35	65	65	66	--

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.
8. Specifications for unit operating with video carriers in 42-550 band and digital carriers in 550-750 MHz band.

AMP SPEC		550 MHz (77 CH) FEEDER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
B629	1,2,5,8	9/9	7.5	0	38	0 -18	0	7	0 -17	7	47/40	60	58	58	640
B529	1,2,4	12/8	8.5	0	36	0 -21	0	7	0 -18	7	48/41	--	56	56	950
FNB559	1,2,5	7/6.5	8.0/6.5	1	37	0 -18	0	9	0 -17	8.5	44/35	67	67	67	1150
FNB55C	1,2,5,8	10.5/10.5	7.0/8.0	2	33.5	0 -18	0	9	0 -17	9	44/35	65	68	69.5	1150
FNB75C	1,2,5,8	10.5/10.5	7.0/9.0	2	37	0 -18	0	11.5	0 -15	11.5	44/35	65	68	69.5	1150
BA 108002-04	2	18/11	10.0	0	29	0 -21	0	7	0 -3.5	0	47/40	65	61	60	600
BA 108002-01	2	18/11	10.0	0	29	0 -21	0	7	0 -3.5	0	47/40	65	61	60	600
BA 109004-02	2	16.5/9.5	7.0	0	31	0 -21	0	7	0 -3.5	0	47/40	65	61	60	400
BA 142030-01		18.5/11.5	11.5	0	29	0 -6	0	7	0 -3.5	0	47/40	--	58	57	400
BA 109014-01	2	26.2/26.2	6.0	0	20.8	0 -18	0	0	0	0	47/40	56	57	57	220
E559	3,4	11/3	7.0	0	36	0 -24	0	7	0 -18	0	47/40	--	61	61	1020
E539	3,4	16/9	9.5	0	31	0 -24	0	7	0 -18	0	47/40	--	61	64	650
E529	3,4	16/9	9.5	0	31	0 -24	0	7	0 -18	0	47/40	65	62	61	650
E519	3,4	14/7	9.0	0	31	0 -24	0	7	0 -18	0	45/38	63	62	60	550
E629	2,5	15/8	8.0	0	31	0 -18	0	7	0 -17	0	46/39	67.5	64	65	500
E729	2,5	16/9	8.0	0	30	0 -18	0	7	0 -17	0	46/39	65	62.5	63.5	680
E549	3,4	19/12	9.0	0	28	0 -24	0	7	0 -18	0	47/40	65	62	61	650
E509	3,4	18/11	12.0	0	26	0 -24	0	7	0 -18	0	44/37	62	61	59	380
E599	3,4	25/18	11.0	0	19	0 -24	0	7	0 -18	0	44/37	54	60	60	380
E71C	1,2,5,8	11.5/11.5	8.0/8.0	2	25.5	0 -18	0	9	0 -17	9	36/27	70	77	78.5	680
E72C	1,2,5,8	16.5/16.5	7.5/7.0	2	28.5	0 -18	0	9	0 -17	9	43/34	66.5	67	68	680
E73C	1,2,5,8	13.5/13.5	7.5/7.0	2	31.5	0 -18	0	9	0 -17	9	43/34	67	69	70	680
SD76C	2,5,8	10/10	8.5	2	40	0 -18	0	10	0 -17	10	50/40	60	59	59	675

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.
8. Specifications for unit operating with video carriers in 42-550 band and digital carriers in 550-750 MHz band.

AMP SPEC		750 MHz (110 CH) TRUNK, BRIDGER, & FEEDER													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			I ma @ 60 VAC
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	
FNT52C	1,2,5	10/ 8	9.0/ 8.0	2	28	0 -18	0	7	0 -17	7	36/ 27	65	77	67	1250
(BRIDGER OUT)		10/ 8	9.0/ 8.0	2	36	0 -18	0	9	0 -17	2	46/ 35	61	55	55	--
FNT52C	1,2,5, 8	11.5/ 11.5	9.0/ 8.0	2	28	0 -18	0	12.5	0 -17	12.5	39.5/ 27	70	77	78	1250
(BRIDGER OUT)		11.5/ 11.5	9.0/ 8.0	2	36	0 -18	0	12.5	0 -17	12.5	47.5/ 35	65	65	66	--
FNT53C	1,2,5	9/ 6.5	9.0/ 7.0	1	29.5	0 -18	0	11	0 -15	8.5	38.5/ 27.5	65.5	70	67	1150
(BRIDGER OUT)			9.0/ 7.0	1	37	0 -18	0	11	0 -15	8.5	46/ 35	61	58	55	
FNT72C	1,2,5, 8	11.5/ 11.5	9.0/ 8.0	2	28	0 -18	0	12.5	0 -17	12.5	39.5/ 27	70	77	78	1250
(BRIDGER OUT)		11.5/ 11.5	9.0/ 8.0	2	36	0 -18	0	12.5	0 -17	12.5	47.5/ 35	65	65	66	--
FNT72C	1,2,5	10/ 8	9.0/ 8.0	2	28	0 -18	0	9	0 -17	7	36/ 27	65	67	67	1250
(BRIDGER OUT)		10/ 8	9.0/ 8.0	2	36	0 -18	0	11	0 -17	2	46/ 35	61	55	55	--
FNT73C	1,2,5, 8	10.5/ 10.5	9.0/ 8.0	2	29.5	0 -18	0	12.5	0 -15	12.5	40/ 27.5	70	77	78	1150
(BRIDGER OUT)		10.5/ 10.5	9.0/ 8.0	2	37	0 -18	0	12.5	0 -15	12.5	47.5/ 35	65	65	66	
FNT73C	1,2,5	9/ 6.5	9.0/ 8.0	2	29.5	0 -18	0	11.5	0 -15	9	38.5/ 27	65	67	67	1150
(BRIDGER OUT)		9/ 6.5	9.0/ 8.0	2	37	0 -18	0	11	0 -15	2	46/ 35	61	55	55	
FNB55C	1,2,5, 8	10.5/ 10.5	8.0/ 8.0	2	37	0 -18	0	11.5	0 -15	11.5	47.5/ 35	65	68	69.5	1150
FNB55C	1,2,5	9/ 6.5	7.0/ 8.0	2	37	0 -18	0	8.5	0 -15	8.5	46/ 35	64	58	58	1150
FNB75C	1,2,5, 8	10.5/ 10.5	8.0/ 9.0	2	37	0 -18	0	11.5	0 -15	11.5	47.5/ 35	65	68	69.5	1150
FNB75C	1,2,5	9/ 6.5	7.0/ 8.0	2	37	0 -18	0	9.5	0 -15	9.5	46/ 35	64	58	58	1150
E71C	1,2,5, 8	11.5/ 11.5	9.0/ 8.0	2	28	0 -18	0	12.5	0 -15	12.5	39.5/ 27	70	77	78.5	680
E71C	1,2,5	10/ 7.5	9.0/ 8.0	2	28	0 -18	0	8.5	0 -15	8.5	38/ 27	66	70	70	680
E72C	1,2,5, 8	16.5/ 16.5	9.0/ 7.0	2	30	0 -18	0	12.5	0 -15	12.5	46.5/ 34	66.5	67	68	680
E72C	1,2,5	15/ 7	9.0/ 7.0	2	30	0 -18	0	3	0 -15	3	45/ 34	62	57	56.5	680
E73C	1,2,5, 8	13.5/ 13.5	9.0/ 7.0	2	33	0 -18	0	12.5	0 -15	12.5	46.5/ 34	67	69	70	680
E73C	1,2,5	12/ 4	9.0/ 7.0	2	33	0 -18	0	3	0 -15	3	45/ 34	63	58	58	680
SD76C	2,5,8	10/ 10	--	2	43	0 -18	0	13	0 -15	13	53/ 40	--	--	--	675

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.
8. Specifications for unit operating with video carriers in 42-550 band and digital carriers in 550-750 MHz band.

AMP SPEC		5-30 MHZ (4 CH) REVERSE AMPLIFIERS													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	USED ON
109003-01	4	17/ 17	7.0	0	10	0 -6	0	0	0 -8	0	27/ 27	--	102	--	RA MOD
109003-02	4	17/ 17	8.5	0	13.5	0 -6	0	0	0 -8	0	30.5/ 30.5	--	100	--	RA MOD
109013-01	2,5	17/ 17	7.0	0	14	0 -18	0	0	0 -5.5	0	31/ 31	--	106	--	RA MOD
142006-01		15/ 15	7.0	0	10.5	0 -6	0	0	0 -8	0	25.5/ 25.5	--	106	--	RA MOD
173299-01	2,5	17/ 17	6.5	0	19	0 -18	0	0	0 -5.5	0	36/ 36	--	95	--	SF/ SP
173299-02	2,5	17/ 17	6.5	0	16	0 -18	0	0	0 -5.5	0	33/ 33	--	100	--	SF/ SP
173342-02	2,5	26/ 26	6.5	1	18	0 -18	0	0	0 -7	0	44/ 44	--	83	--	E7XX
172306-01		26/ 26	6.5	0	15	0 -15	0	0	0 -5.5	0	41/ 41	--	90	--	E5XX
172306-01		32/ 32	6.5	0	15	0 -15	0	0	0 -8	0	47/ 47	--	78	--	E5XX
172306-02		28/ 28	6.5	0	18	0 -15	0	0	0 -5.5	0	46/ 46	--	76	--	E5XX
172306-03		32/ 32	6.5	0	15	0 -15	0	0	0 -8	0	47/ 47	--	78	--	E5XX
172306-04	2	28/ 28	6.5	0	18	0 -15	0	0	0 -5.5	0	46/ 46	--	76	--	E5XX
172306-01	5	26/ 26	6.5	0	15	0 -6	0	0	0 -5.5	0	41/ 41	--	90	--	D5XX
172306-03	5	26/ 26	6.5	0	15	0 -15	0	0	0 -5.5	0	41/ 41	--	90	--	D5XX
172306-04	5	26/ 26	6.5	0	18	0 -15	0	0	0 -5.5	0	44/ 44	--	83	--	D5XX
172306-01		17/ 17	7.0	0	12.5	0 -6	0	0	0 -8	0	29.5/ 29.5	--	105	--	MT5XX
172306-02		17/ 17	7.0	0	16	0 -6	0	0	0 -8	0	33/ 33	--	98	--	MT5XX
172306-03		17/ 17	7.0	0	12.5	0 -6	0	0	0 -8	0	29.5/ 29.5	--	105	--	MT5XX
172306-04		17/ 17	7.0	0	16	0 -6	0	0	0 -8	0	33/ 33	--	98	--	MT5XX

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Includes variable gain control of 0-3 dB plus plug-in PADs.
4. Includes variable slope control of 0-3 dB plus plug-in Equalizers.
5. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
6. Contact C-COR Electronics Inc. Sales Department for required information.
7. Specifications subject to change without notice.

AMP SPEC		5-42 MHZ (6 CH) REVERSE AMPLIFIERS													
PARAMETER>		INPUT			GAIN			SLOPE			OUTPUT LEVEL	DISTORTION			
MODEL	NOTES	LEVEL	NOISE FIGURE	LOSS	OPER	RANGE	INT PAD	OPER	RANGE	INT EQ		C/SO	C/XMOD	C/CTB	USED ON
173342-03	2, 3, 6	26/ 26	6.5	0	18	0 -18	0	0	0 -7	0	44/ 44	--	83	--	E7XXJ
FNB559CH	2, 3, 6, 7	16/ 16	8.5	0	16	0 -18	0	0	0 -7	0	32/ 32	--	100	--	
FNT539CH	2, 3, 6, 7	16/ 16	6.5	0	16	0 -18	0	0	0 -7	0	32/ 32	--	100	--	
(BRIDGER IN)	6, 7	26.5/ 26.5	17.0	0	5.5	0 -18	0	0	--	0	--	--	100	--	
FNB55CDJ	2, 3, 7	16/ 16	10.0	0	11	0 -18	0	0	0 -7	0	27/ 27	--	91	--	
FNT53CDJ	2, 3, 7	12.5/ 12.5	10.0	0	14.5	0 -18	0	0	0 -7	0	27/ 27	--	91	--	
(BRIDGER IN)	7	16/ 16	13.5	0	11	0 -18	0	0	--	0	--	--	91	--	
FNT52CDJ	2, 3, 7	12.5/ 12.5	10.0	0	14.5	0 -18	0	0	0 -7	0	27/ 27	--	91	--	
(BRIDGER IN)	7	16/ 16	13.5	0	11	0 -18	0	0	--	0	--	--	91	--	

1. Operational gain measured at highest frequency with equalization and factory set ALC reserve.
2. Gain adjustment obtained by plug-in PADs in 1 dB increments.
3. Slope adjustment obtained by plug-in Equalizers in 1 dB increments.
4. Contact C-COR Electronics Inc. Sales Department for required information.
5. Specifications subject to change without notice.
6. Specifications given for 5-33 MHz performance only.
7. Additional PADs may be used for each reverse input.

Distortion Performance Calculations

CNR for a single amplifer:

$$CNR_0 = \text{Input Level} + 59 - \text{Noise Figure}$$

CNR for multiple amplifers with the same CNR_0 values:

$$\mathbf{CNR_S = CNR_0 - 10 \log N}$$

CNR for multiple amplifiers with different CNR_0 values:

$$\mathbf{CNR_S = 10 \log\left(10^{-CNR_1/10} + 10^{-CNR_2/10} + 10^{-CNR_N/10}\right)}$$

Composite Triple Beat (CTB) for a single amplifier:

$$\mathbf{CTB_1 = CTB_0 - 2\,(L_1 - L_0)}$$

CTB for multiple amplifiers with the same CTB_1 values:

$$\mathbf{CTB_S = CTB_0 - 20 \log N}$$

CTB for multiple amplifiers with different CTB_0 values:

$$\mathbf{CTB_S = 20 \log\left(10^{-CTB_1/20} + 10^{-CTB_2/20} + 10^{-CTB_N/20}\right)}$$

Composite Second Order (CSO) for a single amplifier:

$$\mathbf{CSO_1 = CSO_0 - (L_1 - L_0)}$$

CSO for multiple amplifiers with the same CSO_1 values:

$$\mathbf{CSO_S = CSO_0 - 10 \log N}$$

CSO for multiple amplifiers with different CSO_0 values:

$$\mathbf{CSO_S = 10 \log\left(10^{-CSO_1/10} + 10^{-CSO_2/10} + 10^{-CSO_N/10}\right)}$$

XMOD for multiple amplifiers with the same $XMOD_0$ values:

$$\mathbf{XMOD_S = XMOD_0 - 20 \log N}$$

XMOD for multiple amplifiers with different $XMOD_0$ values:

$$\mathbf{XMOD_S = 10 \log\left(10^{-XMOD_1/20} + 10^{-XMOD_2/20} + 10^{-XMOD_N/20}\right)}$$

Where:

L_0 is the nominal input level (from the specification sheets.)
L_1 is the input level applied to the amplifier.
N is the number of cascaded amplifiers.

CNR and S/N Calculations Example

Given:

Headend Equipment CNR = 60 dB
AML or AM Fiber Link system CNR = 53 dB
Trunk Amplifer Noise figure = 9 dB, Input level = 10 dBmV
Bridger Amplifer Noise Figure = 8 dB, Input Level = 20 dBmV
Line Extender Noise Figure = 9 dB, Input Level = 20 dBmV
Set Top Converter CNR = 53 dB
Television CNR = 55 dB

Find the subscriber CNR at the end of the following cascade:
30 Trunk Amplifiers, 1 Bridger Amplifier, 2 Line Extender Amplifiers.

- Determine the CNR of a single trunk amplifier:

$$\begin{aligned} CNR_{Trunk} &= 59 + InputLevel - Noise\ figure \\ &= 59 + 10 - 9 \\ &= 60\ dB \end{aligned}$$

- Determine the CNR of 30 trunk amplifiers:

$$\begin{aligned} CNR_{All\ Trunks} &= CNR_{Trunk} - 10 \log N \\ &= 60 - 10 \log 30 \\ &= 45.23\ dB \end{aligned}$$

- Determine the CNR of the bridger amplifier:

$$\begin{aligned} CNR_{Bridger} &= 59 + InputLevel - Noise\ figure \\ &= 59 + 20 - 8 \\ &= 71\ dB \end{aligned}$$

- Determine the CNR of a single line extender amplifier:

$$\begin{aligned} CNR_{LE} &= 59 + InputLevel - Noise\ figure \\ &= 59 + 20 - 9 \\ &= 70\ dB \end{aligned}$$

- Determine the CNR of 2 line extender amplifiers:

$$\begin{aligned} CNR_{All\ LEs} &= CNR_{LE} - 10 \log N \\ &= 70 - 10 \log 2 \\ &= 66.99\ dB \end{aligned}$$

CNR and S/N Calculations Example (Continued)

- Determine the CNR of an amplifier cascade (distribution):

$$CNR_{DIST} = -10 \log \begin{pmatrix} 10^{-CNR_{All\ Trunks}/10} + \\ 10^{-CNR_{Bridger}/10} + \\ 10^{-CNR_{LEs}/10} \end{pmatrix}$$

$$= -10 \log \left(10^{-45.23/10} + 10^{-71/10} + 10^{-66.99/10} \right) = 45.20\ dB$$

- Determine the subscriber CNR:

$$CNR_{SUB} = -10 \log \begin{pmatrix} 10^{-CNR_{Headend}/10} + 10^{-CNR_{AML}/10} + \\ 10^{-CNR_{DIST}/10} + \\ 10^{-CNR_{CONVERTER}/10} + 10^{-CNR_{TV}/10} \end{pmatrix}$$

$$= -10 \log \begin{pmatrix} 10^{-60/10} + 10^{-53/10} + \\ 10^{-45.2/10} + 10^{-53/10} + \\ 10^{-55/10} \end{pmatrix} = 43.50\ dB$$

- Determine the subscriber signal to noise ratio:

Given:

Camera S/N = 55 dB
Satellite S/N = 52 dB
Tape S/N = 55 dB
Amplifier system S/N ≈ Amplifer system CNR = 43.5 dB

$$Subscriber_{S/N} = -10 \log \begin{pmatrix} 10^{-S/N_{CAMERA}/10} + \\ 10^{-S/N_{SATELLITE}/10} + \\ 10^{-S/N_{TAPE}/10} + \\ 10^{-S/N_{AMP}/10} \end{pmatrix}$$

$$= -10 \log \begin{pmatrix} 10^{-55/10} + 10^{-52/10} + \\ 10^{-55/10} + 10^{-43.5/10} \end{pmatrix} = 42.40\ dB$$

LinkNet™ Specifications

Path Loss	LN-RMTX-710 (10 mW)		LN-RMTX-708 (8 mW)		LN-RMTX-706 (6 mW)	
	60 Channels 1 Fiber CSO = -63 dB CTB = -67 dB CNR (dB)	80 Channels 1 Fiber CSO = -61 dB CTB = -65 dB CNR (dB)	60 Channels 1 Fiber CSO = -63 dB CTB = -67 dB CNR (dB)	80 Channels 1 Fiber CSO = -61 dB CTB = -65 dB CNR (dB)	60 Channels 1 Fiber CSO = -63 dB CTB = -67 dB CNR (dB)	80 Channels 1 Fiber CSO = -61 dB CTB = -65 dB CNR (dB)
10	-	-	53	52	51	50
11	53	52	52	51	50	49
12	52	51	51	50	49	48
13	51	50	50	49	48	47
14	50	49	49	48	47	46
15	49	48	48	47	-	-
16	48	47	-	-	-	-
17	47	46	-	-	-	-

CNR improves by 2 dB if the optical loss consists of 7 dB splitter loss.

RF Input level (per 40 channels)	18 dBmV ± 5 dB
RF Frequency Response	750 - 54 MHz

LN-SM7X-XX Receiver

Optical Input	1 mW max, ≤500 μW min
RF Frequency Response	750 - 54 MHz
Trunk Output	+36 / +29 dBmV
Feeder Output	+43 / +33 dBmV
Return Loss	16 dB min

LN-SMXX-X1 (200 μW) Return Transmitter

RF Frequency Response	200 - 5 MHz
RF Input level	7 dBmV ± 5 dB
CNR (for 10 dB optical path loss)	55 dB

Fiber Optic Parameters

Standard singlemode fiber		
Wavelength	Attenuation	Dispersion
1310 nm	0.35 dB/km	3 ps/(nm•km)
1550 nm	0.22 dB/km	19 ps/(nm•km)

Insertion Loss for Gould Fiber Optics Optical Couplers (splitters)		
	Insertion Loss (dB)	
Split Ratio	Series S	Series H
50/50	3.4/3.4	3.7/3.7
40/60	4.4/2.5	4.8/2.8
30/70	5.6/1.8	6.1/2.0
20/80	7.4/1.1	8.0/1.3
10/90	10.8/0.6	12.0/0.8
5/95	14.6/0.4	18.4/0.5
1/99	23.0/0.2	23.0/0.3

Specfications for Gould Fiber Optics Star Couplers			
	1X3	1X4	1X8
Insertion Loss	≤ 5.8 dB	≤ 7.5 dB	≤ 11.3 dB
Uniformity	≤ 1.0 dB	≤ 2.2 dB	≤ 3.2 dB
Directivity	≥ 50 dB	≥ 50 dB	≥ 50 dB

Specifications for Gould Fiber Optics Wavelength Division Multiplexers (WDM)	
Wavelengths	1310/1550 nm
Bandpass	± 20 nm
Insertion Loss	≤ 0.5 dB
Directivity	≥ 60 dB

Specifications for JDS Fitel Optical Connectors		
	FC/APC	Super FC/PC
Insertion Loss	0.2 dB	0.2 dB
Back Reflection	-68 dB	-45 dB

Converting % to dB loss:

$$\text{Loss(dB)} = -10 \log\left(\frac{\text{percentage value}}{100}\right) + 0.5 \text{ dB}$$

Calculating System Power Requirements
(Short-Cut Method)

To calculate the system power requirements, the following must be known:

- The power required by each of the amplifiers.
- The loop resistance of the cable.
- The length and size of the cable between each amplifier.

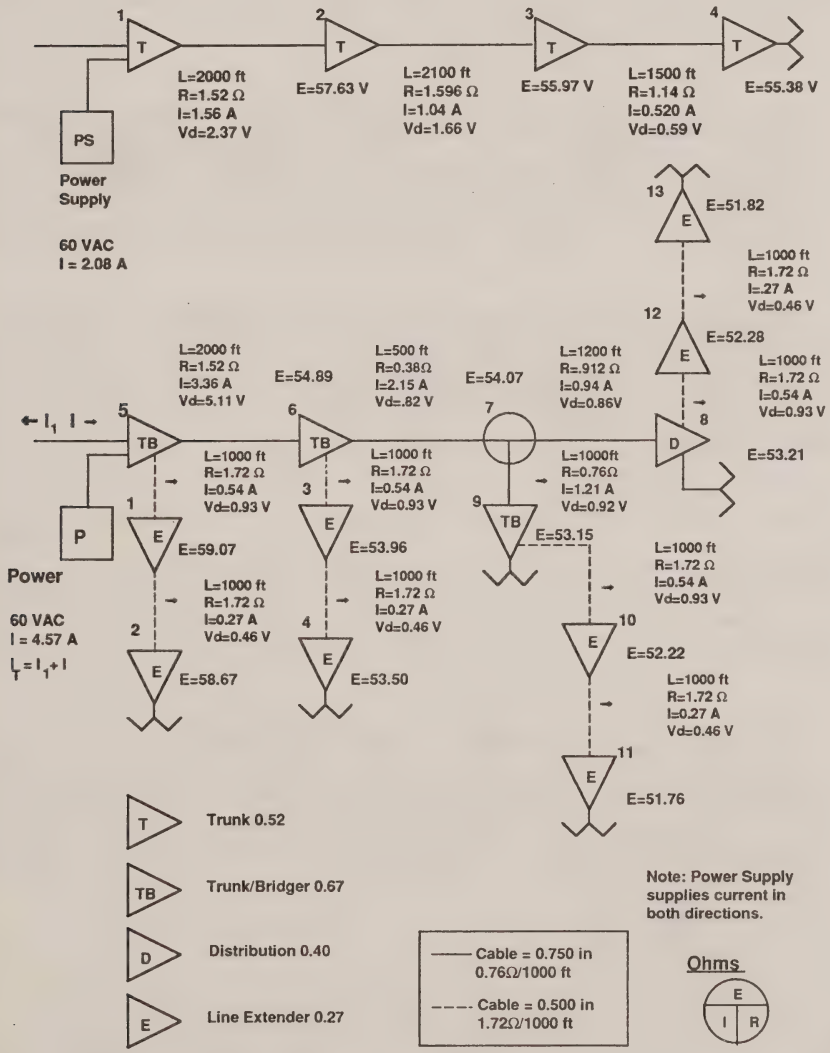
The power required by each amplifier and cable loop resistance can be found in the manufacturer's data sheet or catalog. The length and the size of the cable between amplifiers can be found in the system power map. The sample diagram shows two examples of a "power supply group" with the associated current and power requirements.

In the first example, the power supply is connected to Trunk Amplifier #1. The current required from the power supply is the sum of the currents required by each of the amplifiers. Because each Trunk Amplifier requires 0.52 A, the power supply must provide 2.08 A (0.52 A x 4 amplifiers). The voltage at each of the amplifiers is the power supply voltage *minus* the voltage drop of the cable preceding the amplifier. The cable between Trunk Amplifers #1 and #2 must carry 1.56 A (0.52 A is required by each of Amplifiers #2, #3, and #4). The loop resistance for that length of cable is 1.52 Ω (2,000 feet x 0.76 Ω/ 1,000 feet), and the voltage drop will be 2.37 V (1.56 A x 1.52 Ω). Therefore, the voltage at Trunk Amplifer #2 is 57.63 V (60 V *minus* 2.37 V). The process is repeated for each of the remaining amplifiers. The voltage at Trunk Amplifier #3 is 55.97 V, and the voltage at Amplifier #4 is 55.38 V.

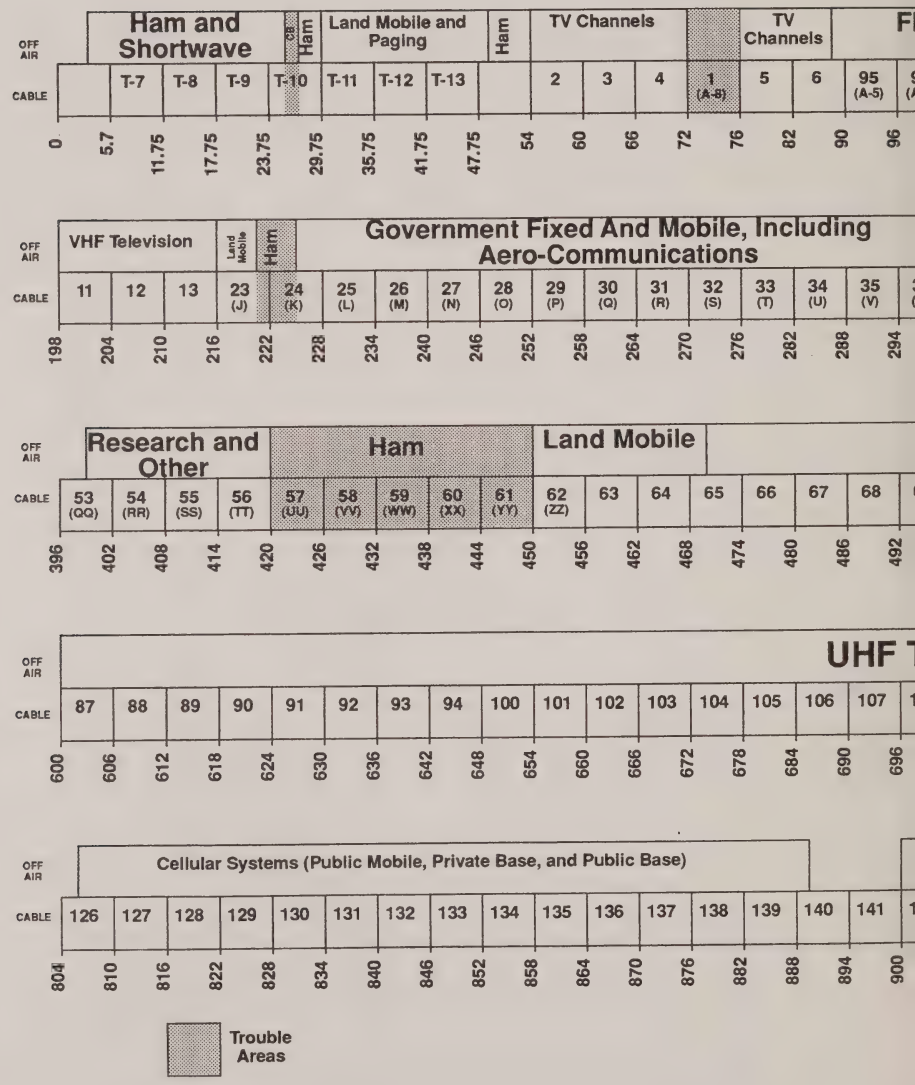
A similar procedure is used when calculating the voltages along the cascade shown in the second example, beginning with the power supply connected to Trunk Amplifier #5. The total current required can be calculated by multiplying the current required for each amplifier type by the number of units in the system, and then taking the sum. The total current provided by the example power supply must be 4.57 A (0.67 A x 3 Trunk/Bridger Amplifiers *plus* 0.27 A x 8 Extenders Amplifiers *plus* 0.4 A x 1 Distribution Amplifier). The voltage at each amplifier will be the power supply voltage *minus* the voltage drop caused by the amount of cable leading to the amplifier.

Assume a minimum voltage at the amplifier farthest from the power supply when choosing the power supply location. The power supply efficiency also determines the number of amplifiers that can be energized from one supply. It is more efficient to locate the power

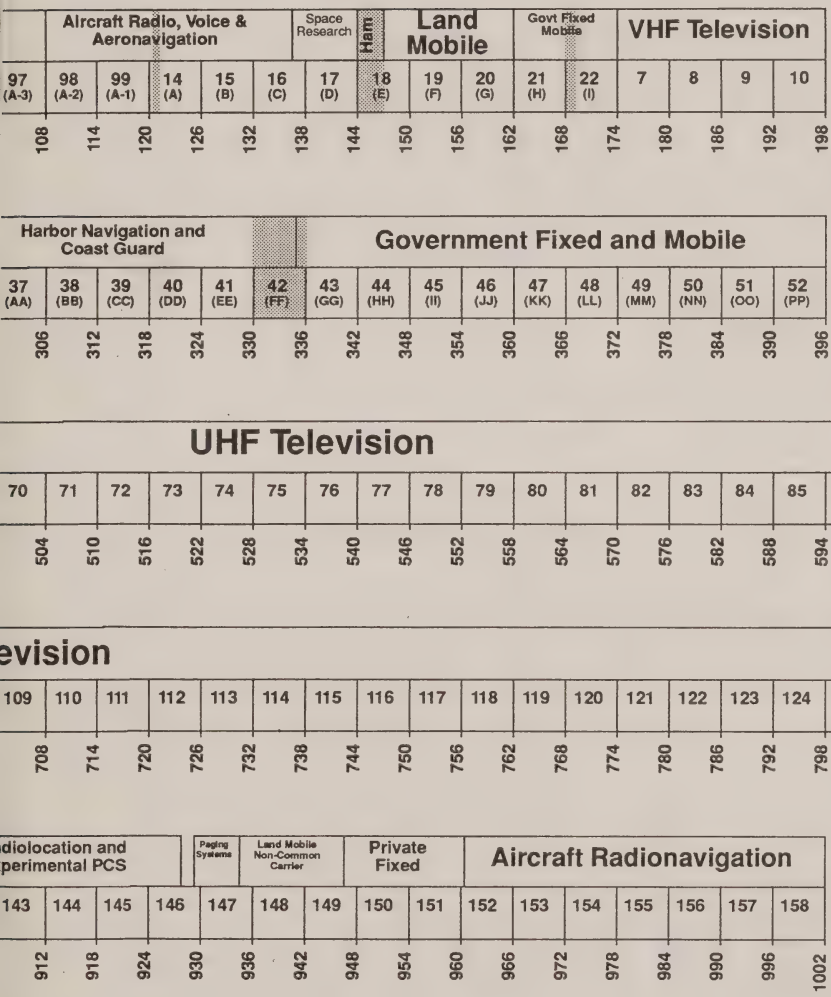
supply in the middle of the "power supply group." This divides the current draw into two directions and results in lower voltage drops. To calculate the total power of the system, determine the power required by each type of amplifier used in the system. Then, multiply by the number of each type and add the total power used by each type of amplifier. To find the number of kilowatts per month, divide the total system power requirement by 0.8 (the power supply efficiency); then multiply by 720 hours per month and divide by 1,000. This equals kilowatts per month.



Frequency Allo



ation Spectrum



MAIN-LINE PASSIVES

Model Number	Frequency (MHz) 5	50	300	450	600	750	900	1000	Minimum Isolation (dB)
S-GHZ-2	4.0	3.8	3.9	4.2	4.3	4.7	5.2	5.4	18
S-GHZ-3 (A OUT)	4.0	3.8	3.9	4.2	4.3	4.7	5.2	5.4	18
(B & C OUT)	7.6	7.2	7.7	7.9	8.3	8.5	9.4	9.7	
S-GHZ-DC-8	2.2	1.6	1.8	1.9	2.2	2.5	3.0	3.3	17
(TAP -8)	8.8	8.5	8.7	8.8	8.8	9.4	9.8	10.0	
S-GHZ-DC-12	1.2	0.8	1.2	1.4	1.6	1.8	2.2	2.3	18
(TAP -12)	12.8	12.8	12.5	12.6	12.9	13.0	13.4	13.8	
S-GHZ-DC-16	1.1	0.7	0.9	1.1	1.4	1.6	2.0	2.2	20
(TAP -16)	16.0	15.9	15.8	16.1	16.2	16.5	16.9	17.2	
PS-GHZ-C	0.8	0.3	0.4	0.6	0.8	1.0	1.1	1.3	40.0
SB-GHZ-MC	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	–
FEQ-750	0.8	8.4	5.6	4.0	2.3	1.5	–	–	18
(dB Cable Eqalized at)			6.4	7.0	8.3	10.5	–	–	

Additional Specifications: Tap loss ±1.0 dB

Regal Two Port Taps

Model Number	Frequency (MHz) 5-10	10-50	50-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
RMT102-4.0	T/ 3.4	T/ 3.4	T/ 3.4	T/ 3.5	T/ 3.5	T/ 3.6	T/ 3.5	T/ 3.6	T/ 3.7	T/ 3.8	T/ 3.8	T/ 4.2
RMT102-8.0	3.7/ 7.2	3.7/ 7.2	3.9/ 7.2	3.9/ 7.2	3.9/ 7.2	4.0/ 7.2	4.1/ 7.4	4.4/ 7.4	4.5/ 7.6	4.6/ 7.6	4.7/ 7.9	4.8/ 8.6
RMT102-11.0	1.9/ 10.3	1.7/ 10.7	2.0/ 10.8	2.0/ 10.8	2.0/ 10.8	2.1/ 10.7	2.2/ 10.7	2.4/ 10.7	2.8/ 10.7	3.1/ 10.8	3.4/ 10.8	3.7/ 11.2
RMT102-14.0	1.4/ 14.6	1.3/ 14.6	1.4/ 14.6	1.4/ 14.5	1.4/ 14.4	1.5/ 14.2	1.7/ 14.2	1.8/ 13.8	2.0/ 13.6	2.3/ 13.2	2.3/ 12.8	3.1/ 13.0
RMT102-17.0	1.1/ 16.5	1.1/ 16.5	1.1/ 16.5	1.1/ 16.5	1.1/ 16.5	1.2/ 16.5	1.4/ 16.6	1.4/ 16.7	1.6/ 16.8	1.8/ 16.8	2.0/ 16.8	2.2/ 17.3
RMT102-20.0	0.8/ 20.6	0.7/ 20.6	0.9/ 20.6	0.9/ 20.6	0.9/ 20.6	0.9/ 20.6	1.0/ 21.8	1.1/ 21.0	1.4/ 21.1	1.6/ 21.2	1.6/ 21.1	1.7/ 21.4
RMT102-23.0	0.8/ 22.5	0.7/ 22.6	0.9/ 22.6	0.9/ 22.6	0.9/ 22.6	0.9/ 22.6	1.1/ 22.6	1.1/ 22.9	1.4/ 22.9	1.6/ 22.8	1.6/ 23.0	1.7/ 23.8
RMT102-26.0	0.8/ 25.6	0.7/ 25.7	0.9/ 25.7	0.9/ 25.7	0.9/ 25.8	0.6/ 25.9	1.1/ 26.1	1.1/ 26.1	1.4/ 26.0	1.6/ 25.8	1.6/ 25.5	1.7/ 25.5
RMT102-29.0	0.8/ 28.5	0.7/ 28.5	0.9/ 28.6	0.9/ 28.6	0.9/ 28.7	0.9/ 28.9	1.1/ 28.9	1.1/ 29.1	1.4/ 29.1	1.6/ 28.9	1.6/ 28.6	1.7/ 28.6
RMT102-32.0	0.8/ 31.6	0.7/ 31.6	0.9/ 31.7	0.9/ 31.7	0.9/ 31.9	0.9/ 32.3	1.1/ 32.6	1.1/ 32.6	1.4/ 32.6	1.6/ 32.5	1.6/ 32.5	1.7/ 32.4
RMT102-35.0	0.8/ 34.7	0.7/ 34.7	0.9/ 34.8	0.9/ 34.9	0.9/ 35.2	0.9/ 35.3	1.1/ 35.7	1.1/ 35.7	1.4/ 35.6	1.6/ 35.5	1.6/ 35.3	1.7/ 35.4

Additional Specifications: THROUGH LOSS/ TAP LOSS T = TERMINATED

Regal Four Port Taps

Model Number	Frequency (MHz) 5-10	10-50	50-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
RMT104-8.0	T/	T/	T/	T/	T/	T/	T/	T/	T/	T/	T/	T/
	7.0	6.9	6.9	6.9	6.9	6.9	7.1	7.1	7.1	7.3	7.3	7.4
RMT104-11.0	3.7/	3.7/	3.9/	3.9/	3.9/	4.0/	4.1/	4.4/	4.4/	4.6/	4.7/	4.9/
	10.4	10.2	10.2	10.2	10.2	10.2	10.2	10.3	10.3	10.5	10.8	11.7
RMT104-14.0	1.9/	1.7/	2.0/	2.0/	2.0/	2.1/	2.2/	2.4/	2.8/	3.0/	3.4/	3.7/
	13.4	14.0	14.0	14.0	14.1	14.1	14.3	14.4	14.4	14.3	14.2	14.2
RMT104-17.0	1.4/	1.2/	1.4/	1.4/	1.4/	1.5/	1.7/	1.8/	2.0/	2.4/	2.5/	3.1/
	17.6	17.7	17.7	17.7	17.4	17.1	16.9	16.7	16.4	16.1	15.8	15.5
RMT104-20.0	1.1/	1.1/	1.1/	1.1/	1.1/	1.2/	1.3/	1.4/	1.5/	1.8/	2.0/	2.2/
	20.2	20.2	20.2	20.3	20.4	20.4	20.1	19.9	20.0	20.3	20.6	21.7
RMT104-23.0	0.9/	0.9/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	23.1	23.1	23.1	23.2	23.3	23.2	23.0	22.8	22.6	22.7	23.2	23.8
RMT104-26.0	0.9/	0.9/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	25.5	25.6	25.6	25.7	25.9	26.1	26.0	25.8	25.7	25.7	25.9	26.6
RMT104-29.0	0.9/	0.9/	0.9/	0.9/	0.9/	1.0/	1.1/	1.1/	1.4/	1.6/	1.6/	1.8/
	28.5	28.6	28.8	29.1	29.1	29.1	28.9	28.8	28.8	28.8	28.5	28.3
RMT104-32.0	0.9/	0.9/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	31.4	31.4	31.6	31.7	31.8	31.8	31.4	31.3	30.9	30.6	30.5	31.3
RMT104-35.0	0.9/	0.9/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	34.5	34.5	34.7	34.9	34.9	35.2	35.1	34.8	34.2	34.1	34.4	35.7

Additional Specifications: THROUGH LOSS/ TAP LOSS T = TERMINATED

Regal Eight Port Taps

Model Number	Frequency (MHz) 5-10	10-50	50-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
RMT108-11.0	T/	T/	T/	T/	T/	T/	T/	T/	T/	T/	T/	T/
	10.4	10.2	10.2	10.3	10.3	10.4	10.4	10.6	10.6	11.0	11.3	11.6
RMT108-14.0	3.7/	3.7/	4.0/	4.0/	4.0/	4.1/	4.2/	4.4/	4.6/	4.7/	4.7/	4.9/
	14.4	13.6	13.7	13.6	13.6	13.7	13.7	14.0	13.8	13.8	14.3	14.9
RMT108-17.0	1.9/	1.9/	2.0/	2.0/	2.0/	2.1/	2.4/	2.5/	2.7/	3.1/	3.2/	3.5/
	17.0	17.1	17.5	17.7	17.8	17.5	17.6	17.7	17.3	17.2	17.5	18.2
RMT108-20.0	1.4/	1.3/	1.4/	1.4/	1.4/	1.5/	1.7/	1.9/	2.0/	2.2/	2.4/	3.1/
	20.1	20.1	20.2	20.3	20.3	20.3	20.3	20.3	20.0	20.4	21.0	21.3
RMT108-23.0	1.2/	1.1/	1.1/	1.1/	1.1/	1.1/	1.3/	1.7/	1.7/	1.7/	2.0/	2.2/
	23.1	23.3	23.4	23.5	23.5	23.6	23.7	23.7	23.2	23.2	23.2	23.3
RMT108-26.0	1.1/	0.9/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	25.2	25.6	25.7	26.0	25.9	25.7	25.7	25.8	25.6	25.6	25.6	25.1
RMT108-29.0	0.9/	0.8/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	28.1	28.9	28.9	29.2	29.3	29.6	29.8	29.7	29.0	28.6	28.3	28.4
RMT108-32.0	0.9/	0.8/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	31.2	31.7	31.8	31.8	32.0	32.0	32.1	32.0	31.8	31.9	31.8	31.7
RMT108-35.0	0.9/	0.8/	0.9/	0.9/	0.9/	1.0/	1.2/	1.3/	1.4/	1.6/	1.6/	1.8/
	34.8	35.2	35.2	35.3	35.5	35.7	35.9	36.0	36.0	35.8	35.9	35.9

Additional Specifications: THROUGH LOSS/ TAP LOSS T = TERMINATED

Comm/Scope
(attenuation/100 ft.)

	PARAMETER III					QUANTUM REACH			
Freq (MHz)	Series 500	Series 625	Series 750	Series 875	Series 1000	Series 540	Series 715	Series 860	Series 1125
5	0.16	0.13	0.11	0.09	0.09	0.14		0.09	0.07
30	0.40	0.34	0.26	0.24	0.23	0.35		0.24	0.17
45	0.49	0.41	0.33	0.30	0.28	0.41		0.29	0.21
50	0.52	0.44	0.35	0.32	0.30	0.44		0.31	0.22
55	0.54	0.46	0.37	0.33	0.31	0.47	0.34	0.32	0.23
83	0.66	0.57	0.46	0.41	0.39	0.58		0.40	0.29
108	0.75	0.65	0.52	0.47	0.44	0.67	0.51	0.46	0.34
150	0.90	0.77	0.62	0.55	0.52	0.79	0.61	0.54	0.41
181	1.00	0.85	0.68	0.60	0.59	0.88		0.59	0.45
193	1.03	0.88	0.71	0.62	0.60	0.90		0.60	0.47
211	1.09	0.92	0.74	0.66	0.62	0.95		0.64	0.49
220	1.11	0.94	0.76	0.67	0.63	0.98		0.65	0.50
250	1.20	1.00	0.81	0.72	0.68	1.03	0.81	0.70	0.54
270	1.24	1.05	0.85	0.75	0.71	1.08		0.72	0.56
300	1.31	1.10	0.90	0.79	0.75	1.14	0.89	0.76	0.60
325	1.37	1.15	0.94	0.82	0.78	1.20		0.80	0.61
350	1.43	1.20	0.97	0.86	0.81	1.23	0.97	0.83	0.65
375	1.47	1.23	1.01	0.89	0.84	1.30		0.86	0.68
400	1.53	1.28	1.05	0.91	0.87	1.33	1.05	0.88	0.70
425	1.57	1.32	1.08	0.95	0.90	1.37		0.92	0.73
450	1.63	1.35	1.12	0.98	0.92	1.41	1.12	0.95	0.75
500	1.73	1.43	1.18	1.03	0.98	1.50		1.00	0.80
550	1.82	1.50	1.24	1.08	1.03	1.58	1.26	1.06	0.84
600	1.93	1.59	1.36	1.20	1.08	1.66	1.32	1.10	0.90
750	2.17	1.78	1.53	1.36	1.23	1.86	1.50	1.24	1.07
865	2.34	1.93	1.64	1.47	1.34	2.00	1.64	1.33	1.17
1000	2.52	2.07	1.78	1.59	1.47	2.17	1.78	1.44	1.28
DC Ω/ 1000 ft									
Copper Clad	1.72	1.07	0.76	0.55	0.40	1.61	0.997	0.724	0.420
Solid Copper	1.2	0.79	0.56	0.41	–	–	–	–	–

TFC (Times Fiber Communications, Inc)

Semiflex (attenuation/100 ft.)

Freq (MHz)	Series 500	Series 625	Series 750	Series 875	Series 1000	Series 565	Series 700	Series 840	Series 1160
5	0.16	0.13	0.11	0.09	0.08	0.13	0.11	0.09	0.07
30	0.40	0.32	0.27	0.23	0.21	0.34	0.27	0.23	0.17
50	0.52	0.42	0.35	0.30	0.27	0.45	0.35	0.30	0.22
108	0.77	0.63	0.52	0.45	0.41	0.66	0.52	0.45	0.34
216	1.10	0.91	0.75	0.65	0.60	0.95	0.76	0.65	0.49
240	1.17	0.96	0.79	0.69	0.63	1.01	0.80	0.69	0.52
270	1.24	1.02	0.84	0.73	0.67	1.07	0.85	0.73	0.56
300	1.31	1.08	0.89	0.78	0.72	1.13	0.90	0.77	0.59
325	1.37	1.13	0.93	0.81	0.75	1.18	0.94	0.81	0.62
350	1.43	1.18	0.97	0.84	0.78	1.23	0.98	0.84	0.65
375	1.48	1.22	1.01	0.88	0.81	1.27	1.02	0.88	0.67
400	1.53	1.27	1.05	0.91	0.84	1.32	1.05	0.91	0.70
450	1.63	1.35	1.12	0.97	0.90	1.40	1.12	0.97	0.75
500	1.73	1.43	1.18	1.03	0.96	1.49	1.19	1.03	0.80
550	1.82	1.51	1.25	1.09	1.01	1.56	1.25	1.09	0.84
600	1.91	1.58	1.31	1.14	1.06	1.64	1.31	1.14	0.89
650	1.99	1.66	1.37	1.119	1.11	1.71	1.37	1.19	0.93
700	2.08	1.73	1.43	1.24	1.16	1.78	1.43	1.25	0.97
750	2.16	1.79	1.48	1.29	1.21	1.85	1.49	1.30	1.01
800	2.24	1.86	1.54	1.34	1.26	1.92	1.54	1.34	1.05
862	2.33	1.94	1.60	1.40	1.32	2.00	1.61	1.40	1.10
900	2.39	1.99	1.64	1.44	1.35	2.04	1.65	1.44	1.13
950	2.46	2.05	1.69	1.48	1.40	2.11	1.70	1.48	1.17
1000	2.53	2.11	1.74	1.53	1.44	2.17	1.75	1.53	1.20
DC Ω/ 1000 ft	1.7	1.1	0.75	0.56	0.41	1.3	0.87	0.60	0.30

Comm/Scope

Drop Cable (attenuation/100 ft.)

Freq (MHz)	F59 Series	F6 Series	F7 Series	F11 Series
5	1.09	0.58	0.47	0.40
55	2.05	1.60	1.25	0.96
83	2.45	1.95	1.50	1.18
187	3.60	2.85	2.22	1.78
211	3.80	3.05	2.36	1.92
250	4.10	3.30	2.56	2.07
300	4.45	3.55	2.82	2.27
350	4.80	3.85	3.05	2.50
400	5.10	4.15	3.25	2.69
450	5.40	4.40	3.44	2.85
500	5.70	4.66	3.62	3.01
550	5.95	4.90	3.82	3.17
600	6.20	5.10	4.00	3.31
750	6.97	5.65	4.51	3.77
865	7.52	6.10	4.88	4.12
1000	8.12	6.55	5.28	4.43

MC²

Semiflex (attenuation/100 ft.)

Freq (MHz)	Cable Size .440 in.	.500 in.	.650 in.	.750 in.	1.00 in.
5	0.17	0.14	0.11	0.10	0.07
30	0.41	0.35	0.28	0.25	0.18
55	0.56	0.48	0.38	0.34	0.24
83	0.69	0.59	0.47	0.41	0.30
100	0.75	0.65	0.51	0.45	0.33
175	1.01	0.86	0.69	0.60	0.45
211	1.11	0.95	0.76	0.66	0.49
250	1.21	1.03	0.83	0.72	0.54
270	1.26	1.08	0.86	0.75	0.56
300	1.33	1.14	0.91	0.79	0.60
312	1.36	1.16	0.93	0.81	0.61
325	1.39	1.19	0.95	0.83	0.62
350	1.44	1.23	0.99	0.86	0.65
375	1.49	1.28	1.02	0.88	0.67
400	1.51	1.32	1.06	0.91	0.70
425	1.59	1.36	1.09	0.94	0.72
450	1.64	1.40	1.13	0.97	0.74
475	1.68	1.44	1.16	1.00	0.76
500	1.72	1.48	1.19	1.03	0.78
550	1.81	1.55	1.25	1.08	0.82
600	1.90	1.63	1.34	1.11	0.87
700	2.05	1.77	1.45	1.21	0.94
800	2.22	1.91	1.56	1.30	1.02
900	2.36	2.03	1.67	1.39	1.09
1000	2.49	2.15	1.77	1.47	1.16
DC Ω/ 1000 ft	2.04	1.57	1.01	0.73	0.41

TFC (Times Fiber Communications, Inc)

Drop Cable (attenuation/100 ft.)

Freq (MHz)	59 Series	6 Series	611 Series	11 Series
5	0.81	0.61	0.56	0.36
30	1.45	1.17	1.00	0.75
50	1.78	1.44	1.20	0.93
108	2.48	2.02	1.65	1.30
216	3.49	2.85	2.31	1.83
240	3.68	3.00	2.44	1.94
270	3.91	3.19	2.59	2.06
300	4.13	3.37	2.74	2.17
325	4.31	3.51	2.86	2.27
350	4.48	3.65	2.98	2.36
375	4.65	3.79	3.09	2.44
400	4.81	3.92	3.20	2.53
450	5.13	4.17	3.41	2.69
500	5.43	4.42	3.61	2.85
550	5.72	4.65	3.80	3.01
600	6.00	4.87	3.99	3.16
650	6.27	5.09	4.16	3.30
700	6.53	5.29	4.33	3.44
750	6.78	5.50	4.50	3.58
800	7.03	5.69	4.66	3.71
862	7.33	5.93	4.85	3.88
900	7.50	6.07	4.96	3.97
950	7.73	6.25	5.11	4.10
1000	7.95	6.43	5.25	4.23

Siecor MIC™ Cable Fiber Identification Guide

(SOLID) 1-10		(DASHED) 11-20		(STRIPED) 21-30	
1	Blue	11	Blue + Black Dash	21	Blue + Black Stripe
2	Orange	12	Orange+ Black Dash	22	Orange+ Black Stripe
3	Green	13	Green+ Black Dash	23	Green+ Black Stripe
4	Brown	14	Brown+ Black Dash	24	Brown+ Black Stripe
5	Slate	15	Slate+ Black Dash	25	Slate+ Black Stripe
6	White	16	White+ Black Dash	26	White+ Black Stripe
7	Red	17	Red+ Black Dash	27	Red+ Black Stripe
8	Black	18	Black+ White Dash	28	Black+ White Stripe
9	Yellow	19	Yellow+ Black Dash	29	Yellow+ Black Stripe
10	Violet	20	Violet+ Black Dash	30	Violet+ Black Stripe

CABLE LOSS CONVERSION CHART

f1 (MHz)	f2 (MHz)	Conversion Factor
220	270	1.108
220	300	1.168
220	330	1.225
220	400	1.348
220	450	1.430
220	550	1.581
220	600	1.651
270	300	1.054
270	330	1.106
270	400	1.217
270	450	1.291
270	550	1.427
270	600	1.491
300	330	1.049
300	400	1.155
300	450	1.225
300	550	1.354
300	600	1.414
330	400	1.101
330	450	1.168
330	550	1.291
330	600	1.348
330	750	1.508
330	860	1.614
330	1000	1.741
400	450	1.061
400	550	1.173
400	600	1.225
400	750	1.369
400	860	1.466
400	1000	1.581
450	550	1.106
450	600	1.155
450	750	1.291
450	860	1.382
450	1000	1.491
550	600	1.044
550	750	1.168
550	860	1.250
550	1000	1.348
600	750	1.118
600	860	1.197
600	1000	1.291
750	860	1.071
750	1000	1.155
860	1000	1.078

CONVERSION FACTOR = $\sqrt{\frac{f_2}{f_1}}$

TO FIND CABLE LOSS AT f2 WHEN LOSS AT f1 IS KNOWN: $L_0 = L_1\sqrt{\frac{f_2}{f_1}}$

To find the loss in a specific length of cable:

$$\left(\frac{\text{cable length (in feet)}}{100\text{ ft}}\right) \text{x loss value from table}$$

Example:

cable length=215 ft

loss/100 ft =2.36 dB (from tables)

$$\left(\frac{215\text{ ft}}{100\text{ ft}}\right) \text{x } 2.36 = 5.07 \text{ dB}$$

FREQUENCY DIFFERENCE ΔF
INDEX
LEVEL DIFFERENCE ΔL
1. MARK THE DIFFERENCE BETWEEN THE SYSTEM BANDEDGE FREQUENCIES ON THE ΔF LINE. MARK THE SYSTEM TILT ON THE ΔL LINE. (THE EXAMPLE SHOWS 550 MHZ - 50 MHZ OR A ΔF OF 500 MHZ AND 7 DB TILT OR ΔL.)
2. DRAW A LINE BETWEEN THESE POINTS. NOTE THE POINT WHERE THE LINE CROSSES THE INDEX LINE (PIVOT POINT).
3. MARK THE DIFFERENCE BETWEEN THE HIGH CARRIER FREQUENCY AND THE LOWER BANDEDGE FREQUENCY ON THE ΔF LINE. (THE EXAMPLE SHOWS 360 MHZ – 50 MHZ OR A ΔF OF 310 MHZ.) DRAW A LINE FROM THIS POINT THROUGH THE PIVOT POINT TO THE ΔL LINE.
4. THE POINT ON THE ΔL LINE IS THE DESIRED TILT (DIFFERENCE BETWEEN OUTPUT LEVELS) OF THE AMPLIFIER WHEN USING CARRIERS OTHER THAN BANDEDGES.
5. ADD THE LOW CARRIER OUTPUT LEVEL TO THE CALCULATED DESIRED TILT TO OBTAIN THE DESIRED OUTPUT LEVEL AT THE HIGH CARRIER FREQUENCY.
(A) Nomograph Method.
$L_C = \left(\frac{L_H - L_L}{F_H - F_L}\right) \times (F_C - F_L) + L_L$
WHERE: L_C = THE DESIRED SYSTEM OUTPUT LEVEL AT THE HIGH CARRIER FREQUENCY
L_H = THE SYSTEM OUTPUT LEVEL AT THE HIGH BANDEDGE FREQUENCY
L_L = THE SYSTEM OUTPUT LEVEL AT THE LOW BANDEDGE FREQUENCY
F_H = THE SYSTEM HIGH BANDEDGE FREQUENCY
F_L = THE SYSTEM LOW BANDEDGE FREQUENCY
F_C = THE HIGH CARRIER FREQUENCY
(B) Equation Method.

Methods for calculating balancing carrier levels for carriers that are not at the bandedges.

SEQ-750 SERIES CABLE EQUALIZERS

Model	Insertion Loss in dB at Frequency (MHz) 50	100	200	300	400	500	600	700	750	*
SEQ-750-2	1.8	1.7	1.5	1.3	1.2	1.1	1.1	1.0	1.0	2.0
SEQ-750-3	2.8	2.5	2.2	1.9	1.7	1.5	1.3	1.1	1.0	3.2
SEQ-750-4	3.7	3.2	2.7	2.3	2.0	1.7	1.4	1.2	1.0	4.2
SEQ-750-5	5.0	4.3	3.7	3.1	2.5	2.1	1.7	1.3	1.0	5.9
SEQ-750-6	6.6	5.6	4.6	3.8	3.0	2.4	1.8	1.4	1.0	7.8
SEQ-750-7	7.3	6.1	5.0	4.0	3.2	2.5	1.9	1.4	1.0	8.7
SEQ-750-8	8.2	6.8	5.6	4.5	3.5	2.7	2.0	1.4	1.0	9.9
SEQ-750-9	9.6	8.0	6.5	5.2	4.1	3.1	2.2	1.5	1.0	11.7
SEQ-750-10	10.2	8.5	6.9	5.5	4.3	3.2	2.3	1.6	1.0	12.4
SEQ-750-11	11.3	9.4	7.6	6.1	4.7	3.5	2.5	1.7	1.0	13.7
SEQ-750-12	12.4	10.2	8.3	6.5	5.0	3.7	2.6	1.7	1.0	15.3
SEQ-750-13	13.6	11.2	9.1	7.2	5.5	4.0	2.8	1.8	1.0	16.6
SEQ-750-14	14.9	12.2	9.9	7.7	5.9	4.3	2.9	1.8	1.0	18.3
SEQ-750-15	15.7	12.8	10.3	8.1	6.1	4.4	3.0	1.9	1.0	19.3
SEQ-750-16	17.0	13.9	11.1	8.7	6.5	4.7	3.2	1.9	1.0	20.9

*dB of cable equalized 750 MHz

Pass Band Flatness: ±0.3 dB

Return Loss: Input: 18 dB Output: 16 dB

SCS-750 SERIES CABLE SIMULATORS

MODEL	Insertion Loss in dB at Frequency (MHz) 50	100	200	300	400	500	600	700	750	dB of cable simulated at 50	300	450	550	600	750
SCS-750-2	1.0	1.2	1.4	1.5	1.6	1.7	1.8	1.8	1.8	0.2	0.7	0.8	0.9	1.0	1.0
SCS-750-3	1.0	1.3	1.6	1.9	2.2	2.4	2.6	2.7	2.8	0.3	1.3	1.6	1.8	1.9	2.2
SCS-750-4	1.0	1.5	2.0	2.4	2.7	3.0	3.3	3.5	3.7	0.6	1.9	2.4	2.7	2.9	3.2
SCS-750-5	1.0	1.7	2.4	3.0	3.5	4.0	4.4	4.7	5.0	0.9	2.8	3.6	4.1	4.3	4.9
SCS-750-6	1.0	2.0	3.0	3.8	4.6	5.2	5.8	6.2	6.6	1.2	4.1	5.1	5.7	6.0	6.8
SCS-750-7	1.0	2.2	3.3	4.2	5.1	5.8	6.4	6.9	7.3	1.4	4.7	5.9	6.6	6.8	7.7
SCS-750-8	1.0	2.4	3.6	4.7	5.6	6.5	7.2	7.7	8.1	1.8	5.4	6.8	7.6	7.9	8.9
SCS-750-9	1.0	2.6	4.1	5.4	6.6	7.6	8.4	9.1	9.6	2.0	6.5	8.2	9.1	9.5	10.7

Passband Flatness, peak-to-valley: 0.5 dB

Return Loss: Input:18 dB Output: 16 dB

MEQ-550 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	100	300	400	450	500	550	*
MEQ-550-0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEQ-550-1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
MEQ-550-2	2.0	1.8	1.4	1.2	1.1	1.1	1.0	1.4
MEQ-550-3	3.0	2.7	1.8	1.4	1.3	1.1	1.0	2.8
MEQ-550-4	4.0	3.5	2.2	1.7	1.4	1.2	1.0	4.1
MEQ-550-5	5.0	4.3	2.6	1.9	1.6	1.3	1.0	5.5
MEQ-550-6	6.0	5.2	3.0	2.1	1.7	1.4	1.0	6.9
MEQ-550-7	7.0	6.0	3.4	2.3	1.9	1.4	1.0	8.3
MEQ-550-8	8.0	6.8	3.8	2.6	2.0	1.5	1.0	9.7
MEQ-550-9	9.0	7.7	4.1	2.8	2.2	1.6	1.0	11.1
MEQ-550-10	10.0	8.5	4.5	3.0	2.3	1.6	1.0	12.4
MEQ-550-11	11.0	9.3	4.9	3.2	2.5	1.7	1.0	13.8
MEQ-550-12	12.0	10.2	5.3	3.5	2.6	1.8	1.0	15.2
MEQ-550-13	13.0	11.0	5.7	3.7	2.8	1.9	1.0	16.6
MEQ-550-14	14.0	11.8	6.1	3.9	2.9	1.9	1.0	18.0
MEQ-550-15	15.0	12.7	6.5	4.1	3.0	2.0	1.0	19.3
MEQ-550-16	16.0	13.5	6.9	4.4	3.2	2.1	1.0	20.7
MEQ-550-17	17.0	14.3	7.3	4.6	3.3	2.1	1.0	22.1
MEQ-550-18	18.0	15.2	7.7	4.8	3.5	2.2	1.0	23.5

*dB of cable equalized at highest frequency.

Passband Flatness, peak-to-valley: 0.4 dB

Return Loss: Input: 18 dB Output: 16 dB

MEQT-550 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	100	300	400	450	500	550	*
MEQT-550-4	7.0	6.3	4.5	3.9	3.7	3.4	3.0	5.5
MEQT-550-8	11.0	9.6	6.1	4.8	4.1	3.7	3.0	11.1
MEQT-550-11	13.8	12.0	7.2	5.4	4.6	4.0	3.0	15.2

*dB of cable equalized at highest frequency.

Passband Flatness, peak-to-valley: 0.4 dB

Return Loss: Input: 18 dB Output: 16 dB

MCS-550 SERIES CABLE SIMULATORS

	Insertion Loss in dB at Frequency (MHz)								dB of cable simulated at					
MODEL	50	150	300	330	400	450	500	550	300	330	400	450	500	550
MCS-550-2	0.5	0.8	1.1	1.3	1.5	1.6	1.8	2.0	1.0	1.1	1.3	1.5	1.7	1.9
MCS-550-3	1.0	1.6	2.2	2.3	2.5	2.7	2.8	2.9	2.0	2.1	2.3	2.5	2.6	2.7
MCS-550-4	1.0	1.9	2.8	3.0	3.3	3.5	3.7	3.9	3.0	3.2	3.5	3.7	3.9	4.1
MCS-550-5	1.0	2.1	3.1	3.5	3.9	4.4	4.6	5.1	4.0	4.4	4.8	5.3	5.5	6.0
MCS-550-6	1.0	2.4	4.0	4.3	4.7	5.2	5.5	6.0	5.0	5.3	5.7	6.2	6.5	7.0
MCS-550-7	1.0	2.6	4.4	4.9	5.4	5.8	6.3	7.0	6.0	6.4	6.9	7.4	7.9	8.5
MCS-550-8	1.0	2.9	5.1	5.6	6.2	6.7	7.2	8.0	7.0	7.4	8.0	8.6	9.1	9.9
MCS-550-9	1.0	3.4	6.0	6.5	7.1	7.9	8.3	8.9	8.0	8.5	9.1	9.9	10.3	10.9

Passband Flatness, peak-to-valley: 0.4 dB

Return Loss: Input: 18 dB Output: 16 dB

MEQ-450 SERIES CABLE EQUALIZERS

	Insertion Loss in dB at Frequency (MHz)									
MODEL	50	121.25	150	211.25	265.25	300	360	400	450	*
MEQ-450-2	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	1.2
MEQ-450-3	2.7	2.3	2.1	1.8	1.6	1.4	1.3	1.2	1.0	2.5
MEQ-450-4	4.4	3.5	3.2	2.6	2.2	2.0	1.5	1.3	1.0	5.0
MEQ-450-5	5.2	4.2	3.8	3.1	2.5	2.2	1.7	1.4	1.0	6.2
MEQ-450-6	6.1	4.8	4.3	3.4	2.8	2.4	1.8	1.5	1.0	7.5
MEQ-450-7	6.9	5.4	4.9	3.9	3.1	2.7	2.0	1.5	1.0	8.7
MEQ-450-8	7.8	6.1	5.4	4.3	3.4	3.0	2.1	1.6	1.0	10.0
MEQ-450-9	8.6	6.7	6.0	4.7	3.7	3.2	2.3	1.7	1.0	11.2
MEQ-450-10	9.5	7.4	6.6	5.1	4.0	3.7	2.4	1.8	1.0	12.4
MEQ-450-11	10.3	8.0	7.1	5.5	4.4	3.7	2.5	1.9	1.0	13.7
MEQ-450-12	12.0	9.3	8.2	6.4	4.9	4.2	2.8	2.0	1.0	16.2
MEQ-450-13	12.9	9.9	8.8	6.8	5.3	4.4	3.0	2.1	1.0	17.4
MEQ-450-14	14.6	11.2	9.9	7.6	5.9	4.9	3.2	2.2	1.0	19.9
MEQ-450-15	15.4	11.8	10.4	8.0	6.2	5.1	3.4	2.3	1.0	21.1
MEQ-450-16	15.3	12.4	11.0	8.4	6.5	5.4	3.5	2.4	1.0	22.4
MEQ-450-17	17.1	13.1	11.6	8.8	6.8	5.6	3.7	2.5	1.0	23.6
MEQ-450-18	18.0	13.7	12.1	9.2	7.1	5.9	3.8	2.5	1.0	24.9

*dB of cable equalized at highest frequency.

Passband Flatness, peak-to-valley: 0.4 dB

Return Loss: Input: 18 dB Output: 16 dB

MEQ-30 SERIES CABLE EQUALIZERS

MODEL	Insertion Loss in dB at Frequency (MHz) 5	30	dB of cable equalized at 30	300	400	450	550
MEQ-30-2	2.7	1.0	3.0	11.0	13.0	13.9	15.4
MEQ-30-3	3.9	1.0	4.6	16.0	18.7	19.9	22.3
MEQ-30-4	4.6	1.0	5.9	21.0	25.0	26.9	29.9
MEQ-30-5	5.3	1.0	7.1	25.0	28.6	30.6	34.3
MEQ-30-6	6.0	1.0	8.5	29.0	34.4	36.7	41.2
MEQ-30-7	6.5	1.0	9.3	33.0	39.3	42.1	46.5

Passband Flatness, peak-to-valley: 0.2 dB

Return Loss: Input: 20 dB Output: 20 dB

MEQT-30 SERIES CABLE EQUALIZERS

MODEL	Insertion Loss in dB at Frequency (MHz) 5	30	dB of cable equalized at 30	300	400	450
MEQT-30-2	5.0	2.5	4.1	14.0	16.7	17.9
MEQT-30-4	6.0	2.5	5.9	21.0	25.0	26.9
MEQT-30-6	7.3	2.5	8.0	28.0	33.4	35.7

Passband Flatness, peak-to-valley: 0.4 dB

Return Loss: Input: 18 dB Output: 16 dB

MEQ-42 AND MEQT-42 SERIES CABLE EQUALIZERS

MODEL	Insertion Loss in dB at Frequency (MHz) 5	42	dB of cable equalized at 42	300	400	450	550	750
MEQ-42-2	2.9	1.0	3.3	8.7	10.0	10.7	11.8	13.8
MEQ-42-3	3.9	1.0	5.0	13.3	15.4	16.3	18.0	21.0
MEQ-42-4	4.8	1.0	6.6	17.6	20.3	21.6	23.8	27.8
MEQ-42-5	6.0	1.0	7.4	25.1	29.0	30.7	34.0	39.7
MEQ-42-6	6.7	1.0	9.5	25.5	29.4	31.2	34.5	40.3
MEQ-42-7	7.9	1.0	11.8	31.6	36.5	38.7	42.8	49.9
MEQT-42-2	4.4	2.5	3.3	8.7	10.0	10.7	11.8	13.8
MEQT-42-3	5.4	2.5	5.0	13.3	15.4	16.3	18.0	21.0
MEQT-42-4	6.3	2.5	6.6	17.6	20.3	21.6	23.8	27.8
MEQT-42-5	7.5	2.5	7.4	25.1	29.0	30.7	34.0	39.7
MEQT-42-6	8.2	2.5	9.5	25.5	29.4	31.2	34.5	40.3
MEQT-42-7	9.4	2.5	11.8	31.6	36.5	38.7	42.8	49.9

Passband Flatness, peak-to-valley: 0.2 dB

Return Loss: Input: 18 dB Output: 16 dB

EQ-550 AND EQT-550 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	42	50	100	300	400	450	500	550	*
EQ-550-2		2.0	1.8	1.4	1.2	1.1	1.1	1.0	1.4
EQ-550-3	3.1	3.0	2.7	1.8	1.4	1.3	1.1	1.0	2.8
EQ-550-4		4.0	3.5	2.2	1.7	1.4	1.2	1.0	4.2
EQ-550-5	5.2	5.0	4.3	2.6	1.9	1.6	1.3	1.0	5.6
EQ-550-6		6.0	5.2	2.9	2.1	1.7	1.3	1.0	6.9
EQ-550-7	7.2	7.0	6.0	3.3	2.3	1.9	1.4	1.0	8.3
EQ-550-8		8.0	6.8	3.7	2.6	2.0	1.5	1.0	9.7
EQ-550-9	9.3	9.0	7.7	4.1	2.8	2.2	1.6	1.0	11.1
EQ-550-10		10.0	8.5	4.5	3.0	2.3	1.6	1.0	12.5
EQ-550-11		11.0	9.3	4.9	3.2	2.4	1.7	1.0	13.9
EQ-550-12	12.2	12.0	10.2	5.3	3.4	2.6	1.8	1.0	15.3
EQ-550-13		13.0	11.0	5.7	3.7	2.7	1.8	1.0	16.7
EQ-550-14		14.0	11.8	6.1	3.9	2.9	1.9	1.0	18.1
EQ-550-15		15.0	12.7	6.4	4.1	3.0	2.0	1.0	19.5
EQ-550-16		16.0	13.5	6.8	4.3	3.2	2.0	1.0	20.8
EQT-550-4	7.2	7.0	6.3	4.5	3.9	3.7	3.4	3.0	5.5
EQT-550-8	11.3	11.0	9.6	6.1	4.8	4.1	3.7	3.0	11.1
EQT-550-11	14.2	13.8	12.0	7.2	5.4	4.6	4.0	3.0	15.2
	T13	2	A-4	37	53	62	70	79	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

CS-550 SERIES CABLE SIMULATORS

Insertion Loss in dB at Frequency (MHz)

dB of cable equalized at frequency

MODEL	50	150	265	300	400	450	500	550	300	400	450	500	550
CS-550-3	1.0	1.6	2.1	2.2	2.5	2.7	2.8	3.0	2.0	2.3	2.5	2.6	2.8
CS-550-4	1.0	1.9	2.6	2.8	3.3	3.5	3.8	4.0	3.0	3.5	3.7	4.0	4.2
CS-550-5	1.0	2.2	3.2	3.4	4.1	4.4	4.7	5.0	4.0	4.7	5.0	5.3	5.6
CS-550-6	1.0	2.4	3.7	4.0	4.9	5.2	5.6	6.0	5.0	5.8	6.2	6.6	6.9
CS-550-7	1.0	2.7	4.2	4.6	5.6	6.1	6.5	7.0	6.0	7.0	7.5	7.9	8.3
CS-550-8	1.0	3.0	4.8	5.2	6.4	6.9	7.5	8.0	7.0	8.2	8.7	9.2	9.7
CS-550-9	1.0	3.3	5.3	5.8	7.2	7.8	8.4	9.0	8.0	9.3	10.0	10.6	11.1
CS-550-10	1.0	3.6	5.9	6.4	7.9	8.6	9.3	10.0	9.0	10.5	11.2	11.9	12.5
	2	19 or F	31 or R	37 or AA	53 or QQ	62 or ZZ	70	79	37 or AA	53 or QQ	62 or ZZ	70	79

Insertion loss in dB at Channel

dB of cable equalized at Channel

EQ-450 AND EQT-450 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	42	50	150	265	300	400	450	*
EQ-450-2		1.8	1.6	1.3	1.2	1.1	1.0	1.2
EQ-450-3	2.8	2.7	2.1	1.6	1.5	1.2	1.0	2.5
EQ-450-4		4.4	3.2	2.2	2.0	1.3	1.0	5.0
EQ-450-5	5.5	5.2	3.8	2.5	2.2	1.4	1.0	6.2
EQ-450-6		6.1	4.3	2.8	2.5	1.5	1.0	7.5
EQ-450-7		6.9	4.9	3.1	2.7	1.5	1.0	8.7
EQ-450-8	8.1	7.8	5.5	3.4	3.0	1.6	1.0	10.0
EQ-450-9		8.6	6.0	3.7	3.2	1.7	1.0	11.2
EQ-450-10		9.5	6.6	4.0	3.4	1.8	1.0	12.4
EQ-450-11	11	10.3	7.1	4.4	3.7	1.8	1.0	13.7
EQ-450-12		12.0	8.2	5.0	4.2	2.0	1.0	16.2
EQ-450-13	13.4	12.9	8.8	5.3	4.4	2.1	1.0	17.4
EQ-450-14		14.6	9.9	5.9	4.9	2.2	1.0	19.9
EQ-450-15	15.9	15.4	10.5	6.2	5.2	2.3	1.0	21.2
EQT-450-3		6.4	5.2	4.3	4.0	3.3	3.0	5.0
EQT-450-7		9.8	7.3	5.4	4.9	3.5	3.0	9.9
EQT-450-10		12.6	9.2	6.5	5.9	4.0	3.0	13.8
EQT-450-12		15.4	11.3	7.9	7.0	4.6	3.5	17.3
	T-13	2	19 or F	31 or R	37 or AA	53 or QQ	62 or ZZ	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

CS-450 SERIES CABLE SIMULATORS

Insertion Loss in dB at Frequency (MHz)

***dB of cable equalized at highest frequency.**

MODEL	50	150	265	300	400	450	300	400	450
CS-450-3	1.0	1.6	2.0	2.2	2.5	2.7	2.0	2.3	2.5
CS-450-4	1.0	2.2	3.2	3.4	4.1	4.4	4.0	4.7	5.0
CS-450-5	1.0	2.4	3.7	4.0	4.9	5.2	5.0	5.8	6.2
CS-450-6	1.0	2.7	4.3	4.6	5.6	6.1	6.0	7.0	7.5
CS-450-7	1.0	3.0	4.8	5.2	6.4	6.9	7.0	8.2	8.7
CS-450-8	1.0	3.3	5.3	5.8	7.2	7.8	8.0	9.3	10.0
CS-450-9	1.0	3.6	5.9	6.4	7.9	8.6	9.0	10.5	11.2
CS-450-10	1.0	3.9	6.4	7.0	8.7	9.5	10.0	11.7	12.4
	2	19 or F	31 or R	37 or AA	53 or QQ	62 or ZZ	37 or AA	53 or QQ	62 or ZZ

Insertion loss in dB at Channel

dB of cable equalized at Channel

EQ-400 AND EQT-400 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	150	265.25	300	330	400	*
EQ-400-2	2.4	1.8	1.4	1.2	1.1	1.0	2.2
EQ-400-5	4.7	3.3	2.1	1.7	1.4	1.0	5.7
EQ-400-7	7.1	4.7	2.7	2.1	1.6	1.0	9.1
EQ-400-9	9.4	6.1	3.6	2.7	2.1	1.0	12.7
EQ-400-12	11.7	7.6	4.2	3.1	2.4	1.0	16.1
EQ-400-14	14.3	9.2	5.1	3.9	3.0	1.0	19.9
EQT-400-5	6.7	5.3	4.1	3.7	3.4	3.0	5.7
EQT-400-9	11.4	8.1	5.6	4.7	4.1	3.0	12.7
EQT-400-11	14.1	9.9	6.5	5.7	4.9	3.5	16.2
		19	31	37	42	53	
	2	or	or	or	or	or	
		F	R	AA	FF	QQ	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQ-360 AND EQT-360 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	150	265.25	300	330	360	*
EQ-360-2	2.4	1.8	1.4	1.2	1.0	1.0	2.2
EQ-360-4	4.6	3.1	1.8	1.5	1.1	1.0	5.5
EQ-360-7	6.9	4.4	2.4	1.8	1.3	1.0	8.8
EQ-360-9	8.8	5.5	2.8	2.1	1.5	1.0	12.1
EQ-360-11	11.2	7.0	3.5	2.6	1.8	1.0	15.6
EQ-360-13	13.3	8.1	3.9	2.8	1.8	1.0	18.8
EQT-360-3	6.6	5.1	3.8	3.5	3.1	3.0	5.5
EQT-360-8	10.8	7.5	4.8	4.1	3.5	3.0	12.1
EQT-360-12	15.8	10.6	6.4	5.3	4.3	3.5	18.8
		19	31	37	42	47	
	2	or	or	or	or	or	
		F	R	AA	FF	KK	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQ-330 AND EQT-330 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	121.25	150	211.25	265.25	300	330	*
EQ-330-2	2.3	1.9	1.7	1.5	1.3	1.1	1.0	2.1
EQ-330-4	4.3	3.2	2.8	2.1	1.6	1.2	1.0	5.2
EQ-330-6	6.5	4.7	4.1	2.9	2.0	1.5	1.0	8.5
EQ-330-9	8.6	6.2	5.3	3.8	2.6	1.7	1.0	11.7
EQ-330-11	10.9	7.8	6.7	4.6	3.0	1.9	1.0	14.9
EQ-330-13	12.7	9.0	7.6	5.1	3.3	2.0	1.0	18.0
EQT-330-3	6.3	5.2	4.8	4.1	3.6	3.2	3.0	5.2
EQT-330-8	10.6	8.2	7.3	5.8	4.6	3.7	3.0	11.7
EQT-330-12	15.2	11.5	10.1	7.6	4.8	4.5	3.5	18.0
	2	14 or A	19 or F	13	31 or R	37 or AA	42 or FF	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQ-300 AND EQT-300 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	211.25	265.25	300	*
EQ-300-2	2.3	1.4	1.1	1.0	2.0
EQ-300-4	4.1	1.9	1.3	1.0	5.0
EQ-300-6	6.0	2.5	1.5	1.0	8.0
EQ-300-8	7.9	3.0	1.7	1.0	11.0
EQ-300-10	9.9	3.5	2.0	1.0	14.0
EQ-300-12	11.6	4.2	2.2	1.0	17.0
EQ-300-15	14.8	5.1	2.5	1.0	22.0
EQT-300-3	6.2	3.9	3.3	3	5
EQT-300-7	9.8	5	3.8	3	11
EQT-300-11	14.2	6.6	4.7	3.5	17
EQT-300-14	18	8	5.5	4	22
	2	13	32 or S	37 or AA	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQ-270 AND EQT-270 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	211.25	270	*
EQ-270-3	3.4	1.5	1.0	3.7
EQ-270-6	5.6	2.1	1.0	7.5
EQ-270-7	7.3	2.4	1.0	10.5
EQ-270-9	8.8	2.7	1.0	13.3
EQ-270-11	10.5	3.1	1.0	16.1
EQ-270-13	13.6	3.8	1.0	20.8
EQT-270-3	5.8	3.5	3.0	4.7
EQT-270-6	9.3	4.4	3.0	10.3
EQT-270-10	13.1	5.4	3.5	15.9
EQT-270-12	16.5	6.6	4.0	20.5
	2	13	32 or S	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQ-245 AND EQT-245 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	211.25	245	*
EQ-245-3	2.7	1.2	1.0	2.8
EQ-245-5	4.6	1.5	1.0	6.3
EQ-245-7	6.8	1.9	1.0	10.0
EQ-245-10	9.7	2.2	1.0	15.2
EQ-245-12	12.5	2.5	1.0	18.7
EQ-245-15	15.3	3.0	1.0	24.9
EQT-245-3	5.6	3.3	3.0	4.4
EQT-245-6	8.6	3.7	3.0	9.8
EQT-245-9	12.3	4.6	3.5	15.1
EQT-245-11	15.4	5.5	4.0	19.5
	2	13	27 or N	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQS-31 SIGNATURE CORRECTION EQUALIZER

Insertion Loss in dB at Frequency (MHz)

MODEL	5	10	20	31
EQS-31	1.2	2.0	3.1	1.1

EQ-220 AND EQT-220 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz)

MODEL	50	211.25	220	*
EQ-220-2	2.4	1.1	1.0	2.6
EQ-220-4	4.3	1.1	1.0	5.9
EQ-220-6	6.1	1.2	1.0	9.3
EQ-220-9	8.9	1.3	1.0	14.3
EQ-220-11	11.2	1.4	1.0	18.5
EQT-220-2	5.3	3.2	3.0	4.1
EQT-220-5	8.0	3.3	3.0	9.1
EQT-220-8	11.5	3.9	3.5	14.1
EQT-220-10	14.3	4.5	4.0	18.2
	2	13	23 or J	

Insertion loss in dB at Channel

*dB of cable equalized at highest frequency.

EQLT-XXX-7 SERIES LINEAR TILT EQUALIZERS

MODEL	Frequency (MHz)	Linear Tilt (dB)	Flatness
EQLT-300-7	54-300	7	±15 dB
EQLT-330-7	54-330	7	±15 dB
EQLT-360-7	54-360	7	±15 dB
EQLT-400-7	54-400	7	±15 dB
EQLT-450-7	54-450	7	±15 dB

EQ-30 AND EQT-30 SERIES CABLE EQUALIZERS

Insertion Loss in dB at Frequency (MHz) | dB of cable equalized at frequency

MODEL	5	30	30	300	400	450	550
EQ-30-2	2.7	1.0	3.0	11.0	13.0	13.9	15.4
EQ-30-4	4.6	1.0	5.9	21.0	25.0	26.9	29.9
EQ-30-7	6.5	1.0	9.3	33.0	39.3	42.1	46.5
EQT-30-2	5.0	2.5	4.1	14.0	16.7	17.9	19.8
EQT-30-4	6.0	2.5	5.9	21.0	25.0	26.9	29.9
EQT-30-6	7.3	2.5	8.0	28.0	33.4	35.7	40.5
	T-7	T-11	T-11	37 or	53 or	62 or	78

Insertion Loss in dB at Channel | dB of cable equalized at Channel

SF7XX AND SP7XX DISTRIBUTION CONFIGURATION

DWG # & OPTION	DISTRIBUTION PLUG-IN AREAS		INSERTION LOSS IN dB AT 550 MHz		
	D1	D2	PORT 2	PORT 3	PORT 4
1 OUTPUT					
A	STRIP-S	—	—	0	—
B	STRIP-L	STRIP-L	—	—	0
2 OUTPUT					
D	STRIP-L	SPLIT	4.2	—	4.2
E	STRIP-L	DC8A	2.2	—	9.0
F	STRIP-L	DC8B	9.0	—	2.2
G	STRIP-L	DC12A	1.4	—	12.4
H	STRIP-L	DC12B	12.4	—	1.4
J	SPLIT	STRIP-S	4.2	4.2	—
K	SPLIT	STRIP-L	—	4.2	4.2
L	DC8A	STRIP-S	9.0	2.2	—
M	DC8A	STRIP-L	—	2.2	9.0
N	DC8B	STRIP-S	2.2	9.0	—
P	DC8B	STRIP-L	—	9.0	2.2
R	DC12A	STRIP-S	12.4	1.4	—
S	DC12A	STRIP-L	—	1.4	12.4
T	DC12B	STRIP-S	1.4	12.4	—
U	DC12B	STRIP-L	—	12.4	1.4
3 OUTPUT					
V	SPLIT	SPLIT	8.4	4.2	8.4
W	SPLIT	DC8A	6.4	4.2	13.2
X	SPLIT	DC8B	13.2	4.2	6.4
Y	SPLIT	DC12A	5.6	4.2	16.6
Z	SPLIT	DC12B	16.6	4.2	5.6
AA	DC8A	SPLIT	13.2	2.2	13.2
AB	DC8A	DC8A	11.2	2.2	18.0
AC	DC8A	DC8B	18.0	2.2	11.2
AD	DC8A	DC12A	10.4	2.2	21.4
AE	DC8A	DC12B	21.4	2.2	10.4
AF	DC8B	SPLIT	6.4	9.0	6.4
AG	DC8B	DC8A	4.4	9.0	11.2
AH	DC8B	DC8B	11.2	9.0	4.4
AJ	DC8B	DC12A	3.6	9.0	14.6
AK	DC8B	DC12B	14.6	9.0	3.6
AL	DC12A	SPLIT	16.6	1.4	16.6
AM	DC12A	DC8A	14.6	1.4	21.4
AN	DC12A	DC8B	21.4	1.4	14.6
AP	DC12A	DC12A	13.8	1.4	24.8
AR	DC12A	DC12B	24.8	1.4	13.8
AS	DC12B	SPLIT	5.6	12.4	5.6
AT	DC12B	DC8A	3.6	12.4	10.4
AU	DC12B	DC8B	10.4	12.4	3.6
AV	DC12B	DC12A	2.8	12.4	13.8
AW	DC12B	DC12B	13.8	12.4	2.8

B6XX SINGLE OUTPUT DISTRIBUTION CONFIGURATIONS

DWG # & OPTION	DISTRIBUTION PLUG-IN AREAS			INSERTION LOSS IN dB AT 550 MHz			
	B	D1	D2	PORT 3	PORT 4	PORT 7	PORT 8
1 OUTPUT							
1A	STRIP-S	-	STRIP-L	-	-	-	0
1B	STRIP-L	STRIP-L	-	-	0	-	-
2 OUTPUT							
2A	SPLIT	STRIP-L	STRIP-L	-	4.2	-	4.2
2B	STRIP-S	-	SPLIT	-	-	4.2	4.2
2C	STRIP-L	SPLIT	-	4.2	4.2	-	-
5A	DC8A	STRIP-L	STRIP-L	-	9.0	-	2.2
5B	DC8B	STRIP-L	STRIP-L	-	2.2	-	9.0
5C	STRIP-S	-	DC8B	-	-	9.0	2.2
5D	STRIP-L	DC8B	-	9.0	2.2	-	-
3 OUTPUT							
3A	SPLIT	SPLIT	STRIP-L	8.4	8.4	-	4.2
3B	SPLIT	STRIP-L	SPLIT	-	4.2	8.4	8.4
6A	SPLIT	STRIP-L	DC8B	-	4.2	13.2	6.4
6B	SPLIT	DC8B	STRIP-L	13.2	6.4	-	4.2
7A	DC8A	SPLIT	STRIP-L	13.2	13.2	-	2.2
7B	DC8B	STRIP-L	SPLIT	-	2.2	13.2	13.2
8A	DC8A	STRIP-L	SPLIT	-	9.0	6.4	6.4
8B	DC8B	SPLIT	STRIP-L	6.4	6.4	-	9.0
9A	DC8A	DC8B	STRIP-L	18.0	11.2	-	2.2
9B	DC8B	STRIP-L	DC8B	-	2.2	18.0	11.2
10A	DC8B	DC8B	STRIP-L	11.2	4.4	-	9.0
10B	DC8A	STRIP-L	DC8B	-	9.0	11.2	4.4
4 OUTPUT							
4A	SPLIT	SPLIT	SPLIT	8.4	8.4	8.4	8.4
11A	SPLIT	DC8B	SPLIT	13.2	6.4	8.4	8.4
11B	SPLIT	SPLIT	DC8B	8.4	8.4	13.2	6.4
12A	DC8A	SPLIT	SPLIT	13.2	13.2	6.4	6.4
12B	DC8B	SPLIT	SPLIT	6.4	6.4	13.2	13.2
12C	SPLIT	DC8B	DC8B	13.2	6.4	13.2	6.4
13A	DC8B	SPLIT	DC8B	6.4	6.4	18.0	11.2
13B	DC8A	DC8B	SPLIT	18.0	11.2	6.4	6.4
14A	DC8A	SPLIT	DC8B	13.2	13.2	11.2	4.4
14B	DC8B	DC8B	SPLIT	11.2	4.4	13.2	13.2
15A	DC8A	DC8B	DC8B	18.0	11.2	11.2	4.4
15B	DC8B	DC8B	DC8B	11.2	4.4	18.0	11.2

DC8B IN LOCATION B HAS THE LOW LOSS LEG DIRECTED TO LOCATION D1 FOR PORTS 3 AND 4.

DC8A IN LOCATION B HAS THE LOW LOSS LEG DIRECTED TO LOCATION D2 FOR PORTS 7 AND 8.

B6XX Intermediate Bridger Operation		
IBA Pickoff Plug-in Accessory	Trunk Through-loss	Loss to RF Module
MS-550-2	6.2	4.2
MDC-550-8A	4.2	9.0
MDC-550-12A	3.4	12.4

B6XX DUAL OUTPUT DISTRIBUTION CONFIGURATIONS

DWG # & OPTION	DISTRIBUTION PLUG-IN AREAS		INSERTION LOSS IN dB AT 550 MHz			
	D1	D2	PORT 3	PORT 4	PORT 7	PORT 8
2 OUTPUT						
2A	STRIP-L	STRIP-L	-	0	-	0
3 OUTPUT						
3A	SPLIT	STRIP-L	4.2	4.2	-	0
3B	STRIP-L	SPLIT	-	0	4.2	4.2
6A	STRIP-L	DC8B	-	0	9.0	2.2
6B	DC8B	STRIP-L	9.0	2.2	-	0
4 OUTPUT						
4A	SPLIT	SPLIT	4.2	4.2	4.2	4.2
11A	DC8B	SPLIT	9.0	2.2	4.2	4.2
11B	SPLIT	DC8B	4.2	4.2	9.0	2.2
12C	DC8B	DC8B	9.0	2.2	9.0	2.2

LEGEND FOR B6XX DISTRIBUTION CONFIGURATIONS:

Table Code	Meaning of Code	Model Number of Components
—	No Components or No Output	
B	BA Output Plug-in Area	
D1	Left Side Distribution Plug-in Area	
D2	Right Side Distribution Plug-in Area	
DC8A	Directional Coupler	MDC-550-8A
DC8B	Directional Coupler	MDC-550-8B
SPLIT	Splitter	MS-550-2
STRIP-L	Long Stripline	MSL-550L
STRIP-S	Short Stripline	MSL-550S

FORMULA FOR PORT OUTPUTS:

SINGLE ACTIVE OUTPUT	OUTPUT AT PORT = BRIDGER RF MODULE OUTPUT - B ACCESSORY LOSS - DISTRIBUTION ACCESSORY LOSS
DUAL ACTIVE OUTPUT	OUTPUT AT PORTS 3 & 4 = BA MODULE OUTPUT - DISTRIBUTION ACCESSORY LOSS
	OUTPUT AT PORTS 7 & 8 = BRIDGER RF MODULE OUTPUT - DISTRIBUTION ACCESSORY LOSS

FlexNet™ and LinkNet™ Distribution Accessories

Accessory	Loss at 750 MHz	Loss at 1 GHz
S-2	3.8	4.0
DC-8	2.0/8.2	2.5/8.5
DC-12	1.3/12.3	1.9/12.5

B5XX, FT5XX, PT5XX, ST5XX and T5XX Distribution Configurations

DRAWING NUMBER & OPTION*	DISTRIBUTION PLUG-IN AREAS				INSERTION LOSS IN dB @550 MHz AT PORT NUMBER				ALTERNATE CONFIGURATION
	B		D1	D2	3	4	7	8	
1 OUTPUT									
16B	ST	←	ST	–	---	0	---	---	2
1A	ST	→	–	ST	---	---	---	0	2
2 OUTPUTS									
2A	S		ST	ST	---	4.2	---	4.2	1
2C	ST	←	S	–	4.3	4.3	---	---	2
5A	D	→	ST	ST	---	9.1	---	1.6	2
5D	ST	←	DC	–	1.6	9.2	---	---	2
3 OUTPUTS									
3A	S		S	ST	8.5	8.5	---	4.2	2
6A	S		ST	DC	---	4.2	13.4	5.8	2
7A	D	→	S	ST	13.4	13.4	---	1.6	2
8A	D	→	ST	S	---	9.1	5.9	5.9	2
9A	D	→	DC	ST	10.7	18.3	---	1.6	2
10A	D	←	DC	ST	3.2	10.8	---	9.1	2
4 OUTPUTS									
4A	S		S	S	8.5	8.5	8.5	8.5	1
11A	S		DC	S	5.8	13.4	8.5	8.5	2
12A	D	→	S	S	13.4	13.4	5.9	5.9	2
12C	S		DC	DC	5.8	13.4	13.4	5.8	1
13A	D	←	S	DC	5.9	5.9	18.3	10.7	2
14A	D	→	S	DC	13.4	13.4	10.8	3.2	2
15A	D	→	DC	DC	10.7	18.3	10.8	3.2	2

NOTE: Insertions losses are valid for one-way and two-way systems. Use filtered BA Output Accessories to establish two-way communications.

SPECIAL NOTATIONS

---	NO OUTPUT
*	REFER TO C-COR'S SPLICERS POCKET GUIDE FOR A COMPLETE LIST OF OPTIONS
→	ARROWS INDICATE DIRECTION OF SIGNAL FLOW OR THE DIRECTION OF LOW LOSS LEG

DISTRIBUTION ACCESSORIES

ST	STRIPLINE
S	SPLITTER
D	DIRECTIONAL COUPLER

FORMULA:

OUTPUT LEVEL @ PORT NO. = BA MODULE OUTPUT - BA ACCESSORY LOSS - DISTRIBUTION ACCESSORY

FT5XX, PT5XX, ST5XX and T5XX Distribution Configurations using Dual Output PHD BA Modules

DRAWING NUMBER & OPTION*	DISTRIBUTION PLUG-IN AREAS		INSERTION LOSS IN dB @550 MHz AT PORT NUMBER				ALTERNATE CONFIGURA -TION
	D1	D2	3	4	7	8	
2 OUTPUTS							
2	ST	ST	---	0.0	---	0.0	1
3 OUTPUTS							
3	S	ST	4.3	4.3	---	0.0	2
3	ST	S	---	0.0	4.3	4.3	2
6	ST	DC	---	0.0	9.2	1.6	2
6	DC	ST	1.6	9.2	---	0.0	2
4 OUTPUTS							
4	S	S	4.3	4.3	4.3	4.3	1
11	DC	S	1.6	9.2	4.3	4.3	2
11	S	DC	4.3	4.3	9.2	1.6	2
12	DC	DC	1.6	9.2	9.2	1.6	1

NOTE: The Dual Output Parallel Hybrid BA Module performs the splitting and diplexing functions of BA Output accessories. It plugs into the BA Module and BA Output plug-in areas. This table shows which distribution configurations can be used with the Dual Output PHD BA.

Cable Loss and Temperature

If the temperature is between 50° F and 90° F, temperature correction is not required.

To calculate the percentage change of cable loss for a temperature difference:

% change in cable loss = 1% per 10° F change

To calculate the difference in cable loss in a span of cable:

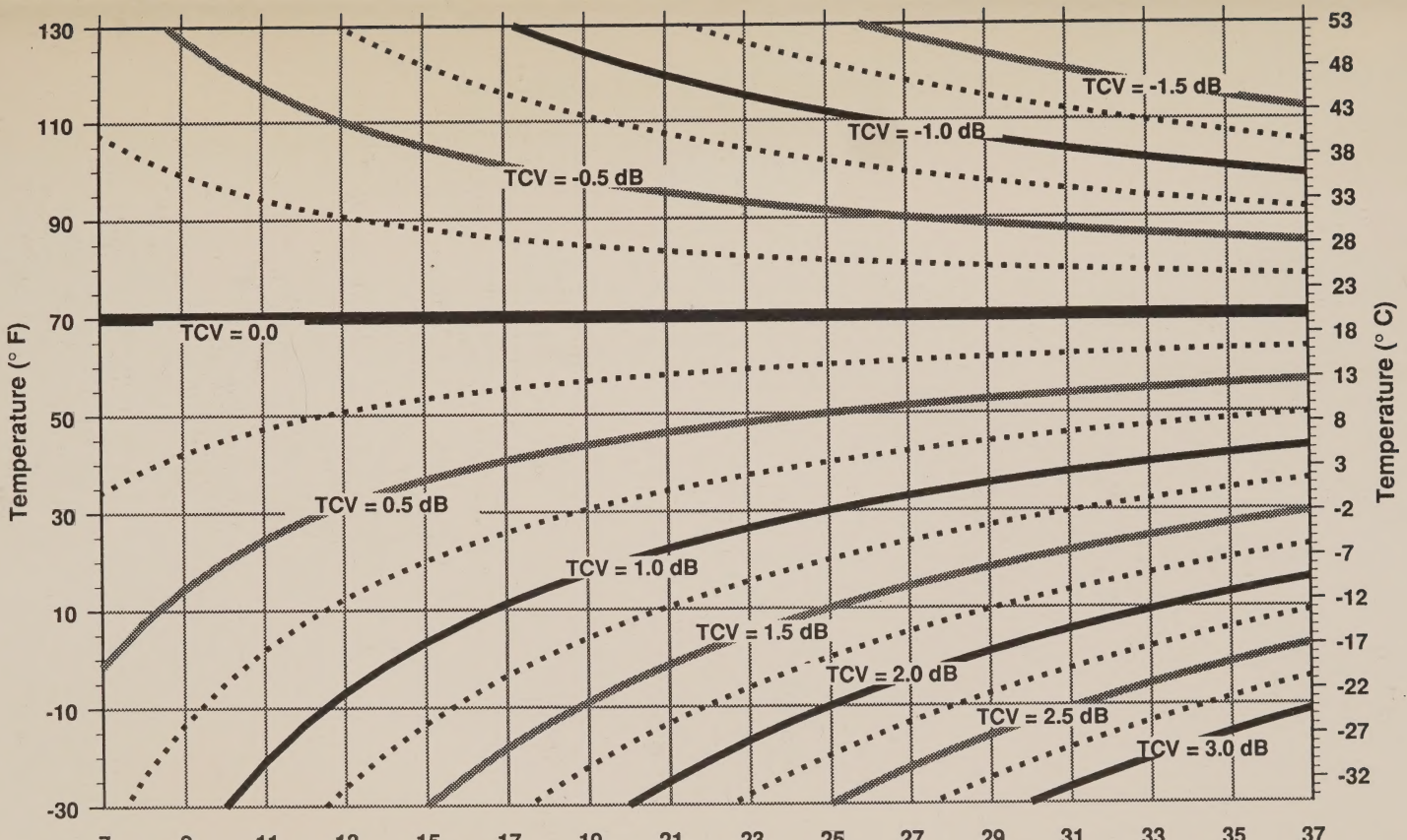
Difference in cable loss = standard loss x %change in cable loss

The combined formula to find the cable loss at a specific temperature for a specific amount of cable (in dB):

Cable Loss @ T1 = {[(T1-70°)/1000] +1} x Cable Loss @ 70° F

The chart on the facing page provides an easy method to find the losses for different lengths of cable.

Remember that the loss is different at different frequencies for a given change in temperature. Also, if temperature changes more than 20° during balancing, recalculate the temperature correction value.


TCV = -1.5 dB
TCV = -1.0 dB
TCV = -0.5 dB
TCV = 0.0
TCV = 0.5 dB
TCV = 1.0 dB
TCV = 1.5 dB
TCV = 2.0 dB
TCV = 2.5 dB
TCV = 3.0 dB
Temperature (° F)
Temperature (° C)
Cable Loss (dB) at 70° F (20.5° C)
130
110
90
70
50
30
10
-10
-30
53
48
43
38
33
28
23
18
13
8
3
-2
-7
-12
-17
-22
-27
-32
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

TCS

Training and Field Engineering Support Documentation.

Converting mW to dBm

mW	dBm	mW	dBm
0.01	-20.00	1	0.00
0.02	-16.99	2	3.01
0.03	-15.23	3	4.77
0.04	-13.98	4	6.02
0.05	-13.01	5	6.99
0.06	-12.22	6	7.78
0.07	-11.55	7	8.45
0.08	-10.97	8	9.03
0.09	-10.46	9	9.54
0.1	-10.00	10	10.00
0.2	-6.99	11	10.41
0.3	-5.23	12	10.79
0.4	-3.98	13	11.14
0.5	-3.01	14	11.46
0.6	-2.22	15	11.76
0.7	-1.55	16	12.04
0.8	-0.97	17	12.30
0.9	-0.46	18	12.55
1	0.00	19	12.79
		20	13.01

10 log (value in mW) = value in dBm

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